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BRITISH BIRDS

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HIEFLY TO THE BIRDS ON THE BRITISH LIST

MAY 1935
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LIST OF ILLUSTRATIONS.

PAGE

SKY-LARK: Female and Young, showing palate markings of the latter. (*Photographed by* John Armitage). (*Plate* 1) 27

DARTFORD WARBLER: Territory in the Dartford Warbler at the nest.

Plate 2. *Upper:* Female waiting to clean nest—a momentary attitude
Lower: Male feeding young. (*Photographed by* H. N. Southern) 58

SKETCH-MAPS, No. 1 and No. 2—Distribution of Dartford Warblers' nests on a Surrey Greensand Moor. May, 1933 ... ... 59, 62

BLACKBIRD: Strange nest-building by wounded ... 79

LITTLE OWL: Nest under Railway 85

BRIDLED TERNS: At the nest, Pulau Sepoi, June 19th, 1934 93

GANNET COLONIES OF ICELAND:—

Eldey from S.S.W. (*Photographed by* Lieut. R. C. Egan, R.N.) 102

Eldey from N.N.E. at about 500 yards. (*Photographed by* Petty Officer R. G. Hatcher, R.N.) 103

MOVEMENTS OF RINGED BIRDS FROM ABROAD TO THE BRITISH ISLES AND FROM THE BRITISH ISLES ABROAD, Addenda iii.: –

Starling: Map to show origin of winter visitors to British Islands 107

Blackbird: Map to show origin of winter visitors to British Islands 111

Cuckoo: Map showing recovery positions of birds ringed as nestlings in Great Britain 112

BLACK-HEADED GULLS: Nesting in Trees—Site of nest at Oakmere, Cheshire, June 27th, 1934 116, 117

POMATORHINE SKUA: In Flight. (*Photographed by* Lieut.-Com. R. R. Graham, R.N.) 118

PAGE

MOVEMENTS OF RINGED BIRDS FROM ABROAD TO THE BRITISH ISLES AND FROM THE BRITISH ISLES ABROAD, Addenda iii. :—

Common Heron : Map to show recovery of nestlings 133

Lapwing : Map to show recovery of nestlings ... 137

TEMMINCK'S STINT : Sitting on nest. (*Photographed by* Herman L. Lovenskiold) 149

WILLOW-TITMOUSE : Feeding young. (*Photographed by* T. Russell Goddard) 166

GREAT CRESTED GREBE : Sketch-map of Frensham Ponds, S.W. Surrey 192

COOT : Abnormal nest on dry mud, Little Tring Reservoir. (*Photographed by* O. G. Pike) 253

SHORT-EARED OWL : At the nest. (*Photographed by* T. Russell Goddard)... 290

RED-THROATED DIVER : In Kensington Gardens. Spring, 1934. (*Photographed by* E. G. Pedler) ... 293

KINGFISHER : Sketch-map showing nests known in 1934 at White Cart, Renfrewshire 295

Types of nest-holes as seen from above ... 296

Types of nest-banks in section 296

About to enter nesting-hole. (*Photographed by* Philip A. Clancey) 298

Sketch-maps giving examples of overcrowding 300

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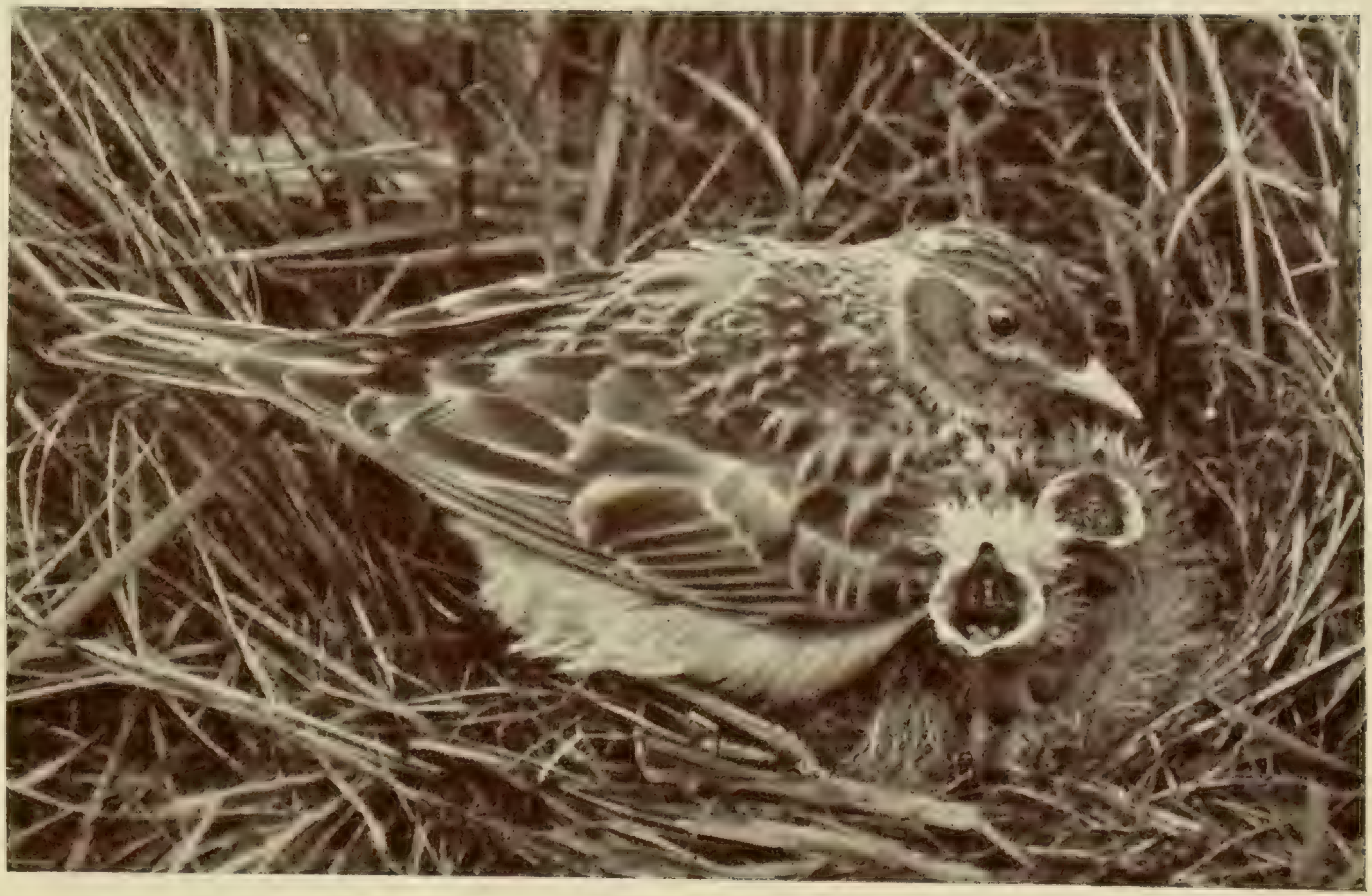

Female Sky-Lark and Young, showing palate markings of the latter.

(*Photographed by* John Armitage.)

[*See page* 27.

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CONTENTS OF NO. 1, VOL. XXVIII., JUNE, 1934.

PAGE

he Breeding-Habits of the Corn-Bunting as observed in North Cornwall: With Special Reference to its Polygamous Habit. By Lt.-Col. and Mrs. B. H. Ryves 2

OTES :—

Raven's Nest with Ten Eggs (E. F. Allen and J. M. Naish) ... 27
Palate Markings of Nestling Sky-Lark (J. Armitage) 27
Firecrest in Hampshire (K. B. Rooke) 28
Song-Thrush Alighting on Sea and Killed by Lesser Black-backed Gull (W. J. Eggeling) 28
Blackbird's Nest with Seven Eggs (A. Roebuck) 29
Jack Snipe in Inner London (D. Seth-Smith) 29
Glaucous Gull in Cornwall (C. Oldham) 29
Iceland Gull in Hampshire and Dorset (K. B. Rooke) ... 29

ort Notes :—

Iceland Redwings and Faeroe Snipe in Kent. Long-eared Owl Breeding in Isle of Man. "Temminck's Stint" Obtained in Herefordshire—*Correction* 30

eviews :—

Bird Life in the Isle of Man. By Col. H. W. Madoc, C.B.E., M.V.O. 31
Transactions of the Norfolk & Norwich Naturalists' Society for 1932-33 31
Report of the Cambridge Bird Club, 1933 32
Transactions of the Carlisle Natural History Society, 1933 ... 32
Journal of the Derbyshire Archæological & Natural History Society, 1933 32
Report of the Marlborough College Natural History Society for 1933 32

A

THE BREEDING-HABITS OF THE CORN-BUNTING AS OBSERVED IN NORTH CORNWALL: WITH SPECIAL REFERENCE TO ITS POLYGAMOUS HABIT.

BY

LIEUT.-COL. AND MRS. B. H. RYVES.

INTRODUCTORY.

THESE notes on the Corn-Bunting (*Emberiza c. calandra*) are the results of observations begun in 1932 and continued, on a larger and more extensive scale, in 1933.

In 1932, twenty-seven nests, the property of sixteen males, were located, and polygamy in the case of four of them was proved, but its extent not appreciated.

In 1933, during the second half of May, the " pitches " of thirty-five breeding males were located but, in the interests of accuracy, for this number would have been unwieldy, it was decided to reduce the number to twenty-four. This was done by eliminating birds established in territories which presented special difficulties from an observational point of view.

These twenty-four birds were settled along a more or less coastal stretch of country about six miles in length. They do not by any means represent the total of nesting birds that this country held. It was our purport—and it was duly fulfilled—to watch these " pitches ", and these alone, very closely, throughout the breeding-season. Indeed, we came to knowing most of their owners almost as a man knows each individual of his dog teams.

It should, perhaps, be mentioned here that experience of previous years had shown us the futility of attempting to find nests, in our district, at an earlier date than that on which we commenced serious observations in 1933.

The males finally selected may conveniently be placed in two categories: (*a*) isolated males, namely those in sole possession of a nesting territory (whether small or *apparently* large enough to hold additional males) where no other male was near enough to be either seen or heard (song, in quiet weather, can be heard at a considerable distance) ; (*b*) colonies of males, namely groups or " linked-up " birds from two upwards, occupying tracts of suitable territory in close proximity to each other, and yet each holding a very distinct "individual territory". The distances between the "pitches" of any two such males varied from about 45 to 180 yards.

Six birds were in category (*a*) and eighteen in category (*b*). These categories are probably largely artificial in the sense that they arise more from the type of country colonized than from the habits or dispositions of the bird, but nevertheless the inference might be drawn that Corn-Buntings prefer communal nesting to nesting in isolation. Let it here be understood that once the "individual territory" of a "group male" has been defined—not a difficult matter—quite as accurate records of polygamous birds can be secured as with "isolated" ones.

The twenty-four observed males owned between them forty-five hens! Surely startling figures, since they show that the preponderance of breeding hens over males was almost as two is to one. The preponderance was probably even greater, for in some cases we may have missed another hen and in four cases this was definitely suspected. It might here be noted that the lie of the country, in some territories, was somewhat tricky and this enhanced the difficulty of observation over a sufficiently wide area. Equally startling, perhaps, is the fact that fifteen of the twenty-four males were definitely polygamous, namely 62.5 per cent.

The total number of nests found, owned by these twenty-four males *alone*, was fifty-four, and each was kept under regular observation. From these nests 126 young safely left. This figure certainly does not represent the total of their progeny. In addition to the probability, referred to above, of there being other hens, there were undoubtedly a few nests belonging to known hens that evaded us. It may not exceed the mark to estimate an output of about 150 young birds.

Early in June, 1933, we began daily to watch closely the selected males and continued until the end of August, when nesting operations were completely finished. On June 30th our bag of nests stood at thirteen. On July 31st the number had risen to forty-five. The fifty-fourth and last nest (holding young) was recorded on August 14th. Forty-three of the nests had been located in the building, laying or incubation periods, the remaining eleven holding chicks. The fact that, in 1932, only twelve of the twenty-seven nests had been found before the eggs had been hatched, speaks of the increased intensity of our work in 1933.

Throughout the period June to August, 1933, inclusive, each of the males, with his belongings, was observed on an average three times a week and, in many cases, at critical periods, practically daily. The accuracy of the records obtained was greatly enhanced by the fact that there were, almost at all times, two pairs of eyes at work, sometimes both concentrated on the same object and, at others, on separate objects. The task we set ourselves to might justly be termed " a two-man job ".

The only detailed study of the Corn-Bunting of which we are aware is that by Mr. John Walpole-Bond (*British Birds*, Vol. XXV., pp. 292-300).

PLUMAGE.

We only allude to the well-known plumage of the Corn-Bunting as we can find no reference in the standard books to a certain feature which at once distinguishes the bird from other Buntings. We refer to what may be termed the " bib ". It is a patch of dark feathers at the base of the throat, exactly resembling a small bib, and presents an excellent guide for identification from a distance. It is worn by both sexes but is rather more pronounced in the male. It is absent in immature birds.

When seen together, the male is noticeably larger than the female and, after some experience, it is often possible accurately to name the sex, even when seen singly.

Coward describes a pale eye-stripe. Though it is difficult to pick this out in a bird that is perched, it is most conspicuous when one is looking down at a hen on her nest.

Unmoulted young of the year can readily be identified in the field by their paler colouring and, as already stated, absence of the bib.

NOTES AND CALLS.

We have no desire to dissertate at length on the birds' notes and calls through a complex combination of letters of the alphabet. Such convey but little to the average human ear, which is not attuned to the subtle variations of almost any note, and it may even confuse.

However, it seems desirable to allude to the few outstanding calls regularly heard in the breeding-season.

There is a somewhat long-drawn note which represents at once a call and a mild warning to another bird or, more usually, to a mate. It sounds to us like " *zip* "—to others perhaps " *chip* " or even " *chit* ". It is freely uttered by a hen returning to eggs and is then more of an informative call to the male. It may also be used by a male as a half-hearted remonstrance against a not very imminent danger.

The cry of true alarm or fear is an even more long-drawn and rather plaintive "*eep*". It may be heard from a male when a nest with young is threatened by some foe. Should a hawk fly over a nesting colony, every bird present will take up the alarm with this note.

Then there is an indescribable and very raucous sound which emanates from a male on various occasions. It is oftenest heard when a hen is reluctant to return to her nest. Her mate will flutter to a perch close to her, stretch out his body and, with quivering wings and lowered head, scold her with a series of this harsh note. Sometimes she will fly off and settle still further from the nest, only to be instantly pursued and "cursed" with doubled vigour. Occasionally she will retaliate by assuming a similar posture and opening her beak, from which, however, no sound issues. More usually, though, she will obey the command and fly to her nest.

A male will often act as above described if another male or any other bird, even a Jackdaw, alights very close to him. It may be worth mentioning here that Linnets appear to be greatly attracted to Corn-Buntings, for they will frequently perch on each side of a male and really seem to be wrapt in admiration of him! Usually he will assume an attitude of utter unconcern. So persistently will Linnets thus "mob" him that we found ourselves talking of them as "the adoring Linnets".

The raucous cry is also uttered during and just before coition. The hen will often invite coition from a perch by a low squeaky call accompanied by wing-quivering.

The last note to be dealt with is certainly a welcome one to the observer grown a bit weary after many weeks of intensive watching. Its utterance is a sure indication of growing restlessness and impending change, and the note may aptly be described as the "flocking" call. It is only heard in the closing stages of the breeding-season. Both in 1932 and 1933, we first heard it towards the very end of July, and it became more general as the days passed by.

Males seem to be the first to use the call, for they are the first to show an increasing disinterest in the nesting activities that may still be in progress. It starts with a single or double note—sharp, clear and staccato—a "*tip*" or "*tip, tip*", eventually developing into a treble and rapidly delivered "*tip-a-tip*".

When nesting quarters have been finally deserted, all birds, young and old, freely utter the treble call. Never a "*zip*" or an "*eep*" now, for these are notes confined to the nesting season alone. In winter-flocks we have never heard anything but the "*tip-a-tip*"s. Of song in winter we have but few records. The most noteworthy is a concert by a flock of males on October 30th, 1931.

GENERAL OBSERVATIONS ON NESTING.

This subject covers a very wide field and must be dealt with under specific heads.

(*a*) *Occupation of territories.*

Although casual visits by birds are paid to old nesting haunts as early as March (or even February) and throughout April, it is not until the second half of May that males take command of nesting territories to hold them more or less *permanently*. Even as late as this, birds may still be seen in flocks (probably birds moving northwards). On May 16th, 1933, we saw a flock of about seventy.

It is impossible to say when the birds pair off or mate. In our belief, the males make little or no effort to secure hens. Rather do they take possession of a suitable territory, hold it against all comers and advertize themselves by constant singing. Rarely is a hen to be seen anywhere and, if they are in the neighbourhood at all, they are lurking in the fields. The conclusion we came to is that a hen offers herself to the male in command of the territory she desires when, and when only, she is in breeding condition. Once she has emerged from her "hiding place" and been accepted by a male, there is no question about her presence, for she will constantly be in evidence.

(*b*) *The Male's Song Perch.*

When a male has selected and acquired the "acre of land" to which he expects to allure a hen, he takes up a fixed stance on some bush, telegraph wire or other suitable perch, considerably in advance of the advent of any hen. Such a perch soon becomes well advertized by a pile of droppings below it.

From this perch he pours forth his song all through the day. When at last he becomes the owner of a hen, he may retain his perch, alternate it with one or two others or desert it altogether, dependent, presumably, on the hen's choice of her nesting site.

He appears to have no hard and fast rule as to the distance of his stance from the nest—it may be anything from 20 to

100 yards or even more. But there is one essential condition and it is that he must be able to command a view of the nest site.

Where a male has more than one mate and the lie of the country is such that no one perch will command all the nests, he will so place himself as to command at least one nest and the route or routes to the feeding grounds of his other hen or hens.

It must be obvious that a male which has a telegraph wire available can, in practically any type of country, command from one perch thereon all the nests he may own, even if one of them may be a considerable way off. It might be remarked here that, in spite of the indolent appearance a male presents, huddled on his perch, he has very keen vision and nothing appears to escape his ever-vigilant eye.

As regards males in a " group ", we have already referred to the distances between their song-perches. Though jealous of their perches, such birds cannot be classed as really quarrelsome. One never sees trespass result in much more than an angry word or, at the worst, a chase or sham combat. A male is usually too occupied in keeping himself well posted with the doings of his own belongings to concern himself with the business of his neighbours.

(*c*) *Period of Nesting Season.*

Observations have shown that July is the month in which breeding activity is at its greatest height. Some hens only lay their first clutches early in this month. A good many begin laying during the last fifteen to twenty days of June. Only a small proportion commence in the first week of June (our earliest record for the first egg is June 3rd, 1930). During the greater part of August there is still considerable bustle. Some birds are incubating July-laid eggs, while many are feeding nestlings or fledglings. But the percentage of hens laying has proved to be almost negligible. Only two cases were recorded in 1933, the clutches being completed on August 6th and 9th respectively. In 1932 (our observations had become very intensive throughout August) we secured three records only, clutches being completed on August 5th, 7th and 9th respectively. But more on this subject elsewhere.

A scrutiny of Mr. Walpole-Bond's observations, already alluded to, reveals a material difference of the duration of the breeding-season among birds of Sussex and of those in N.

Cornwall. Whereas Mr. Bond talks of " early in their breeding-season, i.e., from about May 20th ", we have found that that season here does not commence until early in June. Again, he remarks that " breeding continues throughout August ", while our work shows that egg-laying has almost ceased at the end of July.

As with most birds, there must undoubtedly be exceptions to " prove the rule " both in early and late layings. Indeed, fresh eggs have been recorded during the first half of September. However, on what may be termed " freak cases ", we are not in a position to write.

It might, with some justification, be said that the observations of two successive years are insufficient for forming definite conclusions. On this point—at least with regard to the early layings—it is relevant to say that, although no really intensive work was undertaken before 1932, we have the experience of two or three previous seasons when we watched males closely up to the end of May, over the same ground, without securing any evidence of the presence of nesting hens. It will be necessary, under a further section, to refer again to differences in the habits of Sussex and Cornish birds.

It seems impossible to assign any definite cause for the generally longer nesting-season in Sussex than in N. Cornwall. Possibly climatic conditions may have some bearing, but we are not acquainted with them in Sussex. The birds observed here were established along a coast subjected to severe buffetings by cold and cutting westerly to north-westerly winds.

(*d*) *Nest Construction.*

Nest-building is the province of the hen alone. A nest is sometimes completed in one day but more usually in two. Laying follows quickly (in one instance a bird was watched lining her nest after the first egg had been deposited in it), sometimes on the day following completion, but more usually after one day's interval—rarely longer than this.

During the short " building-period " the male appears to be more excited and interested than at any subsequent stage. The hen usually spends some hours in site-selection and is closely accompanied by the male, which frequently perches near her and indulges in vigorous bursts of song, scoldings and wing-quiverings. Her search of the ground is very thorough. She flutters from perch to perch, frequently dropping out of sight. One particular hen actually built her nest where her inspections had begun. Evidently she had not decided definitely on the site until she was satisfied that there was no other preferable.

While constructing the nest itself, she often packs her beak with large quantities of materials, some of which are so long as to look like streamers as she flies, or rather, flutters. When lining the nest with materials, so fine as often to be invisible to the naked eye, she appears to carry them singly or only two or three at a time. She works at any time of the day up to sunset, but, of course, knocks off for meals, generally under the male's escort. Throughout building she is less concerned by human presence than later on.

Eggs are normally laid on consecutive days until the clutch is completed. In two recorded cases, a day was missed between the layings of the second and third egg.

(*e*) *Types of Nests.*

Mr. Walpole-Bond has described the various types of nests so thoroughly that little about them need be said here. Generally, the nest is a bulky but neat structure with a deep and spacious cup. Most are lined only with very fine bents, some with quantities of black hair covered over by bents. One example contained such hair only and, in another, a dozen gulls' feathers were woven into the general fabric with a couple round the rim of the cup. The majority of nests are well concealed, some wonderfully so.

(*f*) *Nest Sites.*

With one exception, the observed males were established in country rich in cultivation—hay, corn and root crops, which provide the main feeding grounds of all the birds—with plenty of roadside gorse and brambles or large plots of similar jungle. Mixed with them there is usually undergrowth of weeds and coarse grasses.

Of the fifty-four nests located in 1933, forty-eight were in "gorsy" cover, one in rather an extensive plot of coarse herbage alone, and five in crops. The last five were all June nests in which eggs were laid on dates varying from the 5th to the 25th (none of the twenty-seven nests of 1932 were in crops).

One of the five nests—that of the male possessing a territory devoid of gorse jungle—was built under a perennial thistle (known by local farmers as the "horse-thistle") with the previous year's large dead leaves still adhering to its thick stem. This plant was almost the only one standing in a field of very poor, thin hay. Two of the others were in a hayfield of like nature, but containing several big patches of horse-thistles in which the nests were built. The other two (also in thistles) were in a field of " dredge " corn cultivated almost to the cliff edge. The corn was very weak and sparse and a better name would have been " a field with a splendid thistle crop ".

Each of these nests was on the ground with the foundation laid in a depression of the soil apparently formed by the dislodgement of a big stone in the process of tillage, and consisted of fewer materials than those in all other sorts of sites.

From the above, it is evident that, at any time of the nesting season, crops were the least favoured sites. This is directly opposed to Mr. Walpole-Bond's statement that, early in the season, Corn-Buntings in Sussex nest chiefly in crops of all kinds, in coarse grass and weeds, and in bare fields holding clumps of either, and that from late June they are " driven " to nest in gorse-brakes because the crops either have been harvested or have grown too tall and unruly.

Lest it be inferred that we missed many early nests in crops, let it at once be said that, in view of his statement and of what Mr. Coward has written, we specially concentrated from early to late June on crop-fields. Had we paid less attention to them and more to the gorse-jungles, there is no doubt that we should have found some of the nests at an earlier stage than we did.

This marked difference in the tastes of Sussex and Cornish birds seems strange and difficult to account for. However, there is this point, that there are but few localities in this district, affected by this Bunting, which are barren of the gorse-jungles. Those that there are we have not observed.

The most sought-after sites were low gorse, gorse and brambles growing together and brambles only (rich and dark-leaved) running along the ground. Most nests in such cover appear at first sight to rest on the ground, but a closer inspection shows that they are really just off it or just touching it at the conical point of the foundations ; others are definitely a foot or so above it.

Less favoured sites, though not uncommon, were tall patches of gorse and brambles. Nests in such situations were from two to four feet above the ground and not easy to find.

One cleverly-selected site was a huge plant of some very coarse grass growing on the edge of a tall bramble-brake.

The nest was in the centre of it, two feet from the ground, and completely hidden by the tips of the grass-blades having tumbled inwards and thus forming a splendid umbrella.

Mr. Harvey showed me some country near Sennen, affected by Corn-Buntings, which contained just the kind of cover already described in the case of one bird. He and Dr. Blair found a nest in it. The gorse and brambles of this district were lacking in the immediate neighbourhood, though they occurred a mile or so away.

A last word in connexion with the proximity of the nests of two hens belonging to two neighbouring males of a group. They are often not more than forty or fifty yards apart and in one case only twenty-five yards. Hens appear to bear no animosity to each other, be they owned by the same or by different males, and we have never seen them in conflict.

(*g*) *Nest Finding.*

All said and done, we are convinced that close attention to the actions and movements of a male will yield, if not the biggest, certainly the most "profitable" harvest of nests. If the size of the bag be the main desire, then systematic and frequent thrashing out of likely places might produce the most. But this method is obviously disturbing to the birds and damaging to the herbage. Moreover it is not conducive to knowledge of the habits of the birds, and it throws no light on what male owns a nest so found. Therefore, as a proof of polygamy or otherwise, the nest is valueless, for the time at least. To obtain the best results, obviously the birds must be disturbed as little as possible.

As to the first method. To watch a male on his song-perch is to watch a known nesting territory. If a hen is site-hunting or building, he will, as already described, at once put you in touch with her, and her identity is immediately disclosed. If she is incubating, she is bound to quit her eggs for a meal. When she does so, his sudden cessation of song and pose of alertness will proclaim that something is doing. The next moment he will probably dart from his perch and fly rapidly away. Though you may not pick up the hen, it is she whom he is following to her feeding ground. Watch for his reappearance, for he will usually return as her escort, when you are pretty sure to spot her. Then mark where she drops to her nest. If you wait for her next departure, you have plenty of time to walk out, find the nest and regain your observation post before she is due to come back. The owners of the nest have no suspicion of the work you have done behind their backs, and there will be nothing to disturb the normal trend of events. Here, too, you have learnt the hen's identity. If she is feeding nestlings, the male's demeanour will help you to locate the nest, but this will be dealt with under " Rearing of the Young ".

If one marks a building hen down to her nest at long range, the best plan is to advance rapidly towards it to see exactly where she emerges (she often stays at the nest for quite a time). If one approaches too close she will sit very tight and wear down one's patience. On such occasions we have pitted our wits against hers by talking loudly for a while and then by one of us walking noisily away while the other stands silent and motionless. When the noisy person has passed out of ear-shot, up has popped her head and her secret has been wrested from her ! And, she has not been flushed !

INCUBATION.

Incubation, as with nest-building, is solely the business of the hen. No male has ever been seen to visit a nest holding eggs. The following are details of some recorded incubation-periods :—

Nest No. 1.—18.vi., 1st egg ; 19.vi., 2nd egg ; 20.vi., blank ; 21.vi., 3rd egg and hen brooded ; 22.vi., 4th egg ; 4.vii., 3 hatched ; 5.vii., 1 hatched. None reared.

Nest No. 2.—13.vii., 1st egg ; 14.vii., 2nd egg and hen brooded ; 15.vii., 3rd egg ; 16.vii., 4th egg ; 27.vii., 3 hatched ; 28.vii., 1 hatched. All reared.

Nest No. 3.—21.vii., 1st egg ; 22.vii., 2nd egg ; 23.vii., 3rd egg and hen brooded ; 24.vii., 4th egg ; 4.viii., 3 hatched ; 5.viii., 1 hatched. All reared.

Nest No. 4.—25.vi., 1st egg ; 26.vi., 2nd egg and hen brooded ; 27.vi., 3rd egg ; 28.vi., 4th egg ; 10.vii., 3 hatched ; 11.vii., 1 hatched. All reared.

Nest No. 5.—3.viii., 1st egg ; 4.viii., 2nd egg ; 5.viii., 3rd egg and hen brooded ; 6.viii., 4th egg ; 17.viii., 3 hatched ; 18.viii., 1 hatched. Two reared.

Nest No. 6.—9.vii., 1st egg ; 10.vii., 2nd egg ; 11.vii., 3rd egg ; 12.vii., 4th egg and hen brooded ; 13.vii., 5th egg ; 25.vii., 4 hatched, 26.vii., 1 hatched. All reared.

Nest No. 7.—20.vii., 1st egg ; 21.vii., 2nd egg ; 22.vii., 3rd egg ; 23.vii., 4th egg ; 4.viii., 3 hatched (1 addled egg). Two reared.

Nest No. 8.—7.viii., 1st egg ; 8.viii., 2nd egg and hen brooded ; 9.viii., 3rd egg ; 20.viii., 1 hatched ; 21.viii., 1 hatched (1 addled egg). None reared.

To summarize the above :—

ggs of *No.* 1 hatched in 12 & 13 days after last egg was laid.
,, *No.* 2 ,, 11 & 12 days ,, ,, ,,
,, *No.* 3 ,, 11 & 12 days ,, ,, ,,
,, *No.* 4 ,, 12 & 13 days ,, ,, ,,
,, *No.* 5 ,, 11 & 12 days ,, ,, ,,
,, *No.* 6 ,, 12 & 13 days ,, ,, ,,
,, *No.* 7 ,, 12 days ,, ,, ,,
,, *No.* 8 ,, 11 & 12 days ,, ,, ,,

In all the above cases, with the exception of No. 7, where ncubation was commenced with the laying of the last egg, ncubation (or brooding) was begun before the completion of the clutch. Similar behaviour was observed in other nests. A scrutiny of the dates of hatching above recorded seems to disclose the fact that "incubation proper" was in progress from the moment the last egg but one was laid, the last egg hatching out about 24 hours after all the others. It would, therefore, appear that inaccurate incubation-periods are obtained if reckoned from the date the last egg is laid. The correct method would be to reckon the period for the latest hatched chick from the date of the last egg and for the previously hatched chicks from the date of the last egg but one. The correct periods would thus be 12 days in four instances and 13 days in the other four instances. The average for these eight examples works out to about 12½ days.

It is not uncommon for this Bunting to be found brooding her eggs in advance of the laying of even her last egg but one, but such brooding has apparently not advanced the date of the hatching of such eggs. But it is not the purport to examine, in this paper, the intricate problem of incubation by wild birds. Suffice it here that, in our experience with other species also, birds can brood their eggs without any change taking place within the shells, that is to say that such "brooding" has not been "incubation". This explains our use of the words "incubation proper". This point may have some direct bearing on the variability of incubation-periods.

Corn-Buntings are generally tight sitters. We have frequently stood directly over a sitting hen and actually tapped the herbage just above her nest without flushing her.

Also they are very staunch to the nest, as the following incident will demonstrate. We had under observation two nests (in which eggs were being incubated) built in a hayfield. Learning that the crop was to be cut on the morrow, we marked the nests with branches of gorse, showed them to the man who was to work the reaper and asked him to raise the cutting blades as he neared them. On the day following the harvesting operations we visited the field and found one of the birds sitting tight on her nest which was completely exposed to view. The workman had missed our landmark and the blades had passed only an inch above the nest. We found the other hen also sitting (on chicks just hatched)—the cutters had been raised in this case and so about a foot of herbage still remained in the immediate vicinity of the nest. Unfortunately both nests were robbed shortly afterwards ; there was a multitude of Gulls and Jackdaws feeding on the cut-up remains of rabbits killed by the reaper and one of these birds was, no doubt, responsible for the tragedy of the Buntings.

A hen is more wary about returning to a nest with eggs than when building. If one is too close, she will often take wing from a perch near it, rise to a considerable altitude and make wide circular flights, usually alighting again, only to repeat the skyward flight. Sometimes she will fly directly away right out of sight and not return at all for ten or fifteen minutes. On these latter occasions the male will often chase after her.

Returning to the nest, she normally arrives by fast and low flight and settles on some commanding perch from which she drops into it without much delay. Sometimes she will first alight on a more distant perch, from which she views the situation.

It was our custom carefully to mark each nest, as found, with gorse sticks placed on opposite sides of it. These landmarks were never resented. The hens seemed to delight in them, for they used them forthwith as " diving boards " to the nest.

When a hen quits her eggs, she does so by suddenly shooting out of her nest and instantly taking wing and disappearing rapidly to her feeding ground. So suddenly is her departure effected that she may easily be overlooked by the watcher, but the male, if present, never misses her.

A male has never been seen to feed an incubating hen, which has to fend for herself. The length of her absences vary a good deal, but she rarely returns in less than fifteen minutes and sometimes is away for forty minutes. Her sitting shifts are anything from about forty minutes as the shortest, to rather over an hour and a half as the longest.

Whether the eggs are actually brought to an unusually high temperature we cannot say. But if one inspects a nest immediately on the departure of its owner, a very distinct glow of warmth reaches the finger tips before any egg has been touched. We have never experienced this in the nest of any other small bird.

If a male is on his song-perch when his hen quits her eggs, he usually follows her, as stated before, to her feeding ground, which is almost always a long way off (600 yards or possibly more), and escorts her back, watching her down to her nest from his perch. If he happens to be absent, she seems to know where to find him—at least she frequently returns under his escort.

The male's only role appears to be to keep a vigilant eye on the goings and comings of his mate. Rarely, he calls her off her eggs with a low "*zip*", and then accompanies her to her meal.

At one nest which we were observing, the sitting hen uttered harsh chatters, which sounded like "*chukka*". Her male was singing about fifteen yards away. She kept up these guttural notes for five minutes, then quitted her eggs and pitched alongside the male. A few seconds later both birds took wing together.

Addled eggs occur in a fair number of nests, usually only one and more rarely two. Three infertile eggs in a clutch of five was once recorded. In this case, only one of the young was reared. Such eggs remain intact in the nest throughout the fledging-period.

CLUTCHES.

Eggs were laid in the fifty-four nests found in 1933 as follows: twenty in June, thirty-one in July and two in August. One nest, from which we inadvertently flushed the hen when she was lining it, was not laid in. The day following, she completed another nest about four yards distant, in which she laid her first egg the next day. As already mentioned, forty-three of the fifty-four nests were found before any egg was hatched.

The clutches laid were :—

Two eggs in 1 nest (See remarks for Male No. 10 in Tables of Polygamy).
Three eggs in 11 nests.
Four eggs in 20 nests.
Five eggs in 10 nests. Total 42 nests.

The remaining 11 nests, found with chicks, held :—
Three young in 3 nests.
Four young in 7 nests.
Four young in 1 nest ; also one addled egg.

The 27 nests located in 1932 held :—
(*a*) *Eggs* ... two ... 1 nest (nest deserted after second egg was laid).
three ... 3 nests.
four ... 4 nests.
five ... 4 nests. Total 12 nests.

(*b*) *Young* ... one young in 1 nest.
two young in 1 nest ; also two addled eggs.
three young in 3 nests (two held also one addled egg each).
four young in 8 nests.
five young in 1 nest.
six young in 1 nest ; all reared.
Total 15 nests.

From the above records it will be seen that "four-egg" clutches hold a big majority. "Three" and "five-egg" clutches are in about the same proportion. A "six-egg" clutch has proved to be rare in the district, as none was recorded in 1933, and only one in 1932 (the nest holding six young).

REARING OF THE YOUNG.

Here again, the indefatigable hen, practically alone, undertakes the work of rearing the young. However, a good word at last *can* be put in for the male, for he does, on occasions rare enough to merit specially noting, help to feed his progeny.

It has already been shown that, when all the eggs of a clutch have been hatched, most nests hold one chick about twenty-four hours younger than the rest. Since the nestlings grow rapidly, the "baby", on the day of hatching, looks little more than half the size of its brethren. The difference in size, however, is less noticeable when quilling has started.

For the size of this Bunting, nestlings quit the nest at an earlier age than one would expect, namely, when nine to eleven days old or, more rarely, twelve days. The period of development varies a good deal in different broods, but, generally speaking, it is rapid.

Some youngsters are capable at once of flying a few yards. Others still carry a good deal of down and their quills are little more than half feathered. The latter are incapable of flight, but are extraordinarily strong on their legs and, if disturbed, can dive instantly into cover and hide themselves very effectively.

They separate immediately and crouch in hiding in the surrounding herbage, where they usually scrape out a snug hollow almost resembling a half-built nest. Here they may remain a day or more, a ring of droppings forming in a circle round the circumference of their lairs.

So long as nestlings need to be brooded (three or four days), the hen alone both broods and feeds them. At this stage, the hen's visits are frequent, but, when day brooding ceases, they become erratic ; she may feed her chicks a dozen times in an hour or she may not put in an appearance at all for an hour and a half. They are not usually vociferous when fed, though their voices can at times be heard if one is fairly close to the nest.

As soon as eggs are hatched, the male almost ceases to accompany his mate on her foraging expeditions. His role now is to watch the nest from his perch where he continues to sing with much persistence. He still observes closely the movements of the hen and, by a change of pose, shows one that he has seen the hen's approach with a grub in her beak. If she is, for some reason, reluctant to go to the nest, he generally chases her to it.

In the case of a polygamous male, he often changes his perch to one close to a nest holding young. This may take him further from a nest containing eggs which, however, he watches with undiminished alertness for, when the incubating bird quits her eggs, he darts off after her and, having seen her back, returns to his perch near the other nest.

When nestlings have attained a fair size, the male is occasionally seized with a fit of energy and helps the hen for a short spell which rarely exceeds half an hour. During this short burst of activity he works really hard and we have recorded twenty visits paid in thirty minutes. Whereas the hen goes far afield for food, the male, oddly enough, finds grubs close at hand. Having collected one, he alights on his perch and sings a few full bars of song with his mandibles closed over his victim. He then delivers the grub at the nest and returns to his perch where he sings again for a few seconds. When the young are out of the nest, he may help the hen a little more frequently, though the latter still takes the lion's share of the work.

Nest sanitation is attended to by the hen, which removes the excreta, and drops it, while on the wing, some distance away.

The principal diet of the young is a pale green caterpillar (that of the cabbage butterfly, we believe). These butterflies seem to abound in the corn and hay fields. Not infrequently the butterfly itself is captured and taken, wings and all, to the nest. Other grubs—dark looking ones—are also given to the young.

Hens are even more chary about visiting a nest holding young than one with eggs. One is frequently compelled (except from within a car) to move some distance away before a hen will approach it. The male, on the contrary, is almost indifferent to human presence and will usually visit the nest even when one is standing quite close to it.

Fledglings of the earlier nests appear to be fed for a week or ten days after the nest has been vacated. But those of a late nest have been seen being fed by parents when apparently full grown.

Mortality among nestlings is not negligible. The baby of the brood often succumbs, usually when quite young, and nestlings may continue to die until five or six days old. A dead chick is at once removed. Except for this mortality, nestlings appear to be very strong and sturdy. When picked up in the hand, they are surprisingly heavy.

DOUBLE BROODING.

Corn-Buntings are undoubtedly double-brooded, that is to say a certain proportion of hens lay a second clutch of eggs after a brood has been safely reared. A new nest is invariably built.

It must be obvious, however, that, unless the previous history of a bird is known, it cannot definitely be stated that a late nest is a second brood one, even though the date is such as to justify the assumption. Many such nests may, in fact, only be second attempts after failure with first nests at any of their various stages.

We believe that a third brood, namely the laying of a third clutch of eggs after two broods have been successfully reared, is a very rare occurrence here. The nesting season is scarcely long enough. In our own experience, at least, we have not located a single nest that could, with any justification at all, be assumed to be a third brood within the definition given.

On the other hand, we are convinced that a good many hens are quite content with rearing one brood only, be it a successful first effort or the result of a second attempt after a previous failure.

Appended are three tables compiled from very intensive observations which furnished sound evidence for reasonable assumption of (1) double brooding, (2) second attempts and (3) single brooding.

Table of presumed Double Brooding.

HEN.	FIRST NEST.		SECOND NEST.		Distance between Nests.
	First Egg on	Young Left on	First Egg on	Young Left on	
No. 1.	11.vi.	7.vii.	21.vii.	13.viii.	15 yards.
No. 2.	14.vi.	9.vii.	22.vii.	young stolen	20 ,,
No. 3.	15.vi.	12.vii.	21.vii.	young left on 16.viii.	10 ,,
No. 4.	17.vi.	11.vii.	25.vii.	young died	22 ,,
No. 5.	1.vii.	26.vii.	3.viii.	not recorded	3 ,,

NOTES :—

(*a*) Each of the above hens ceased breeding after the success or failure of the second nest.

(*b*) It is certain that Hen No. 5 had not laid an earlier clutch.

(*c*) The period between the young of the first brood leaving the nest and the laying of the first egg of the second brood varied, in the above examples, from eight to fourteen days. It should be noted that a hen can continue to feed her fledglings while building the second nest and while laying the first egg or two.

Table of presumed Second Attempts after Previous Failure.

HEN.	FIRST NEST.		SECOND NEST.		Distance between Nests.
	First Egg on	Deserted on	First Egg on	Young Left on	
No. 6.	15.vi.	20.vi.	13.vii.	7.viii.	2½ yards.
No. 7.	21.vi.	robbed on 9.vii.	16.vii.	10.viii.	70 ,,
No. 8.	late June	robbed on 7.vii.	13.vii.	7.viii.	60 ,,

NOTES :—

(*a*) The cause of desertion of Hen No. 6 was a broken egg. The long interval before re-nesting is inexplicable. The second nest was in precisely the same type of cover and position.

(*b*) Hens Nos. 7 and 8 had their first nests in a hay-field. Their failures, as already described, were due to harvesting the crop. Their second nests were built in the nearest gorse patches.

(*c*) Each of the above hens departed with their broods and their males soon after the nests were vacated. It can definitely be asserted that none of these birds had laid previous clutches.

Table of presumed Single Brooding.

HEN.	First Egg Laid on.	Young Left on.
No. 9	23rd June.	19th July.
No. 10	25th ,,	20th ,,
No. 11	25th ,,	21st ,,
No. 12	5th July.	31st ,,
No. 13	7th ,,	1st August.
No. 14	9th ,,	5th ,,

NOTES :—

(*a*) Hen No. 9, with her family, had vanished by July 24th, and was not seen again.

(*b*) The nest of Hen No. 10 was about three feet away from one found in 1932. She had completely vanished by July 24th, and was not seen again.

(*c*) Hen No. 11 was one of two owned by one male. She had vanished by July 24th and was not seen again. The male remained in the territory until the brood of another of his hens was fledged.

(*d*) Hens Nos. 12, 13 and 14 belonged to one male in an " isolated territory ". Each laid a clutch of five eggs, hatched and reared them all, thus proving themselves to be both prolific and skilful mothers. The three nests were in close proximity to each other, fifteen yards being the greatest distance that separated any of them. As the young of each hen were fledged, their mothers took them right away. The male remained in his territory until August 2nd, leaving Hen No. 14 to complete her task alone. Throughout June we had kept this male under regular observation and had begun to despair of his ever attracting a hen to his " pitch ".

POLYGAMY.

The habits and actions of both males and females have now been described in such detail that it is unnecessary to advance further evidence in proof of polygamy.

Polygamy, in the cases of " isolated " males, becomes at once apparent. Somewhat more prolonged observation is advisable before a " group " male is categoried as the owner of more than one hen.

Trespass, let it be repeated, is not a crime prevalent among males. Each bird is too much concerned with the possession of his own perch and with the doings of his own hens to bother himself much over neighbouring males or their mates.

We have no record of a male molesting, amorously, another's hen. It is not uncommon to observe a hen with a nest outside the boundary of a male's pitch passing to and fro quite close to him without any notice being taken of her.

On one occasion, however, we witnessed a male attack another's mate which was passing close to him, carrying a grub to her nest some 200 yards distant. He at once flew at her and drove her to earth, when a rough and tumble ensued. She soon extricated herself and continued her journey with the grub still in her beak.

At the end of this section will be found narrative tables of the fifteen polygamous males of the 1933 season. No bird was diaried as polygamous until one or more of the following incidents had been noted in connexion with a hen other than one already known to belong to him :—

(1) Coition, followed later by building within the male's territory.

(2) Nest building with the male in company.
(3) The male escorting the hen to and from her nest holding eggs.
(4) The male showing obvious interest in the hen feeding nestlings and none in a neighbouring hen known to belong to another bird.
(5) The male observed feeding nestlings in conjunction with the hen.

As a point of fact, these incidents—in many cases all of them—were noted on numerous occasions, and the identity of every hen *definitely* established.

The relationship between the hens owned by one male is one of amity. There appears to be no jealousy, even when the male, at certain times, shows marked favouritism. They carry out their duties, of course, quite independently of each other, and when they meet, as they often do, there are no encounters. In 1932, when watching a male which owned three hens, we saw one of them quit her nest after feeding her chicks and inspect the nest of another which also held chicks. The male was present, at the time, on his song-perch, and showed no apparent surprise or concern. The nests were about 40 yards apart.

NARRATIVE TABLES OF POLYGAMY.

In the Tables, which follow, the dates given for laying are, in some cases, approximate ones. But the margin of error, we believe, does not exceed 48 hours in any instance.

"Isolated" Males.

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Third Hen Laid on	Distance between Nests.
No. 1.	2	23.vi.	27.vi.	—	50 yards.
No. 2.	3	3.vii.	15.vii.	21.vii.	50 yards and 20 feet.
No. 3.	3	5.vii.	7.vii.	9.vii.	All very close.
No. 4.	2	5.vi.	Nest not located.	—	—

Remarks.

No. 1.—First hen reared a brood ; second hen was robbed of nestlings and disappeared.

No. 2.—The nests of the second and third hens were 20 feet apart and that of the first hen about 50 yards from either of the others.

No. 3.—See note (*d*) at foot of "Table of Single Brooding".

No. 4.—When first hen was incubating, we noted ardent wooings and coition with second hen, and all three birds were seen together. We were forced to give up this territory owing to the difficult lie of the country, involving loss of much time.

"Group" Males.

Group I.—Two Males.

Territory.—A strip of roadside gorse about 120 yards long.

Song-perches.—About 50 yards apart.

Males.—One polygamous and one single-mated.

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Distance between Nests.
No. 5.	2	18.vii.	22.vii.	40 yards.

Remarks.

No. 5.—The second hen had reared a brood from a clutch laid on June 14th. Previous nesting or otherwise of first hen unknown.

Group II.—Four Males.

Territory.—Waste land of gorse, brambles and heather roughly forming a square and about four acres in extent.

Song-perches.—At the four corners of the square.

Males.—Two polygamous, one single-mated and one uncertain (only one nest of the latter located).

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Distance between Nests.
No. 6.	2	18.vi.	No nest.	—
No. 7.	2	25.vi.	7.vii.	30 yards.

Remarks.

No. 6.—First hen hatched on July 4th/5th. On July 4th ardent wooing and coition was seen with second hen. On July 5th site-hunting (close to first hen's nest) in company with the male was observed. On July 6th she had vanished and was not seen again.

No. 7.—Both hens reared a brood and ceased breeding. Neither had laid a previous clutch.

Group III.—Four Males.

Territory.—An irregular piece of rough country (gorse and brambles) about six acres in extent. This country, generally, was difficult for observation.

Song-perches.—Fifty yards between a single-mated male and No. 8; 45 yards between No. 8 and No. 9; 90 yards between No. 9 and No. 10.

Males.—Three polygamous and one single-mated.

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Third Hen Laid on
No. 8.	3	17.vi. and 25.vii. (second brood).	18.vi.	12.vii.
No. 9.	3	13.vii.	20.vii.	7.viii.
No. 10.	2 or 3	7.vii.	18 vii.	23.vii.

Remarks.

No. 8.—First hen's two nests were 22 yards apart and that of second hen about 60 yards from the first nest of the former—the third hen's nest was about 70 yards from each of the above. The male commanded all the hens from tall tamarisks growing on a high hedge. A fifth nest, owned by this male, was found, in which the first egg was laid on July 26th ; this date would fit in with it being the second brood of the second hen, but, as it was 60 yards away, there is the possibility of the bird being a fourth hen.

No. 9.—These three nests were within a patch 35 yards square. No data re previous nesting of first hen. Undoubtedly second brood of second hen, as she was seen feeding fledglings on the day she site-hunted. Third hen had surely nested before, though we have no evidence. Most unlikely that first and third hens were the same bird, as the former's chicks (not well feathered) only left nest on August 3rd.

No. 10.—Second hen deserted (after laying third egg) on July 20th. Third hen laid only two eggs (she hatched and reared them) in a nest 8 yards from that deserted by second hen. There is a possibility that third hen was actually the second hen completing a clutch of five eggs in a new nest after an interval in laying, but, in this case, there is no apparent cause for deserting her first three eggs. It is far more probable that they were separate birds and that second hen came to an untimely end after the laying of her third egg.

Group IV.—Two Males.

Territory.—An undulating stretch of gorse, brambles and coarse herbage close to the cliff. Bleak and exposed.

Song-perches.—Telegraph wires about two posts apart.

Males.—One polygamous, the other uncertain.

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Distance between Nests.
No. 11.	2	late June.	late June.	60 yards.

Remarks.

No. 11.—Both hens laid clutches of five and both nests were robbed about mid-July and the hens disappeared. The male also disappeared 10 days later. The other male's hen (the only one located) reared a brood.

Group V.—Five Males.

Territory.—A coastal stretch of about half a mile, comprising roadside gorse and brambles and, at its western end, two or three acres of rank herbage, thistles and gorse, extending to the cliff-edge.

Song-perches.—Telegraph wires—the males' "pitches" varied from 70 to 180 yards in distance from each other.

Males.—Four polygamous ; the fifth male, at the extreme flank of the territory, was single mated—his hen laid about mid-June and completely vanished during incubation, but the male out-stayed the four polygamous birds and was the most persistent songster ; he remained a presumed widower throughout the season.

Male.	No. of Hens.	First Hen Laid on	Second Hen Laid on	Third Hen Laid on	Fourth Hen Laid on.
No. 12.	2	21.vi. and 31.vii.	30.vi.	—	—
No. 13.	2	13.vi.	18.vi.	—	—
		A second clutch laid by one of the birds.			
No. 14.	2	11.vi. and 21.vii.	28.vi.	—	—
No. 15.	4	23.vi.	4.vii.	9.vii.	24.vii.

Remarks.

No. 12.—The nests of the two hens were 35 yards apart. The two nests of first hen were 60 yards apart (the first in corn and the second in roadside gorse).

No. 13.—First hen robbed of her eggs—second hen reared a brood—nests 40 yards apart. One of the hens—impossible to say which—laid a second clutch (or possibly a third hen).

No. 14.—First hen reared both broods, her nests being about 15 yards apart. Second hen reared a brood and did not lay again, her nest being 50 yards from the first nest of first hen.

No. 15.—All the hens reared their broods. Fourth hen had probably laid a previous clutch which evaded detection. It is very unlikely that fourth hen was the same bird as first hen, whose young only left nest on July 20th. The three earliest nests were within a plot about 50 yards square. The latest nest was 70 yards from the nearest of the other three which further points to the bird being a separate hen.

CESSATION OF SONG AND DEPARTURE.

Towards the end of July a distinct change of manner becomes apparent among some of the males. There is an atmosphere of restlessness and growing disinterest. The number of birds in nesting territories has noticeably increased ; they comprise adult hens, whose last broods have left the nest, and fully fledged young.

By about August 10th the number of birds is considerable. The males, which have not already departed, hold their song-perches as less sacrosanct. Small parties of birds may be seen congregated around a male's perch, while others shamelessly trespass on the privacy of a hen still nesting. The air becomes full of birds flying hither and thither and fluttering about aimlessly over the corn fields. The " *tip-a-tip* " notes are heard everywhere.

As already stated, some males, with their hens and young, have vanished before July is quite out, but most males are still present.

About the end of the first week of August the diminution of song becomes noticeable, and thereafter song continues to lessen and finally to cease. By August 18th, 1933, song had completely ceased in all the observed territories ; this is four days earlier than in 1932.

The first real flock of wandering birds, consisting of about thirty, was seen on August 8th, 1933, and another of fifty to sixty birds on the 15th. On the 25th, numerous birds were noted on inland uplands, far from any nesting haunt.

However, we must make it clear again that nesting operations are not all over in August. A good proportion of birds are still incubating eggs laid in late July and also feeding nestlings and fledglings, but as the month advances, males become increasingly uninterested. Indeed, so strongly, in the end, does the impulse to depart and to join a flock appear to grip the males, that some of them completely desert their hens and leave them to rear their nestlings unwatched and unhelped.

For example, the five hens (three in 1932 and two in 1933), which laid late clutches in early August, were all deserted by their males before the young were fledged. In each case, however, the hens remained staunch to duty. One particular hen, in 1932—a bird belonging to a " group " of four males—was the only Corn-Bunting left in the territory when her nestlings were seven days old ; her chicks left their nest on September 2nd, and, on the 3rd, they and their mother had vanished and may have moved a mile away ; they could fly strongly an hour after the nest was quitted.

On August 26th, 1933, all the observed territories, with the exception of a few loiterers (mostly young birds) in a " group " territory, were found to be empty of birds. On the 30th, no bird at all could be found in any nesting haunt, and we were able to " lay down tools ", at last, with clear consciences.

A last word on the cessation of song. With some males it ended abruptly. A male in good song to-day would be silent to-morrow and his voice not heard again, although he remained at his post for some days longer.

As regards the break-up of the nesting season and cessation of song, our observations of the two years showed no noteworthy variation in either year in reference to the time of the occurrences of these events.

Some Concluding Observations.

Being birds of placid temperament, Corn-Buntings show no resentment towards nesting neighbours. In this district, Stonechats are their most usual neighbours. Three of the latters' nests were found close to those of this Bunting, and, in one instance, two concurrent nests were only ten feet apart. One Corn-Bunting built her nest about fifteen feet from a Nightjar brooding her two young. Other species noted were Meadow-Pipit, Linnet, Hedge-Sparrow, Wren, Sky-Lark, Whitethroat, Sedge-Warbler and Blackbird.

That Corn-Buntings in this district are not immune from victimisation by the Cuckoo was proved in 1932. It was on August 3rd, a very hot day, when we heard the shrill calls of a young Cuckoo. We soon found the bird perched high on a dead gorse bush and sat down to watch. A male Corn-Bunting was singing vigorously nearby. Soon a hen Corn-Bunting appeared with a grub and fed the Cuckoo.

We spent about five hours watching, but never once, during that time, did the male help his mate. He continued to sing persistently. The hen was indefatigable and, although she flew a great distance away for each grub, fed the noisy Cuckoo, on an average, every three or four minutes.

Occasionally the latter took wing and flew strongly towards a distant cornfield. This caused much consternation in both the foster parents, which hotly pursued it and seemed to head and drive it back to its perch. Even a neighbouring male joined in these chases. The birds evidently did not desire the Cuckoo to quit the territory, although it was a fully fledged bird.

During a short rest between feeding journeys we saw the hen settle on a perch near her mate, which instantly trod her (she built no nest subsequently). The incident appears to have been a kind of reaction after the prolonged labours of family cares. We have observed similar coition among Shags with fledged young standing near the nest ledge, and no eggs have been laid later.

We would desire to place on record here our thanks to Mr. G. H. Harvey, " Peatswood ", Penzance, for his valuable assistance and encouragement in the compilation of these records.

NOTES

RAVEN'S NEST WITH TEN EGGS.

N Anglesey, on March 19th, 1934, we found the nest of a Raven (*Corvus c. corax*) in which were ten eggs. We believe hat never more than seven eggs have been recorded before n the British Isles, so this clutch was probably the product of wo hens.

An interesting fact which supports this supposition was the presence of another, apparently new, nest about twenty yards away which—although empty—was newly lined.

Never more than two birds were seen near the nest at the same time, and their behaviour was in every way normal. Thus it may have been that the first hen was killed after aying her eggs, and that the hen which took her place laid her own eggs in the same nest, although another nest was built, or, at least, relined.

Unfortunately the birds deserted a few days later but the eggs were still there on March 29th.

We visited the nest again on April 7th when we intended to take the eggs to ascertain whether they were fertile or not. However, the eggs were gone and the lining was torn out, probably the work of a Carrion-Crow.

The overhang of the cliff prevented our getting an adequate photograph, even with the aid of a rope.

Five of the eggs seemed to be more densely spotted than the remainder.

E. F. ALLEN
J. M. NAISH.

PALATE MARKINGS OF NESTLING SKY-LARK.
(Plate I.)

THE portrait of the female Sky-Lark (*Alauda a. arvensis*) with young, reproduced in Plate 1, was taken at a roadside nest near Buxton on June 1st, 1932. The rendering of the nestlings' palates was made possible by low but favourable ighting, somewhere about 9.0 a.m. (true time).

After feeding two of the four young, the Sky-Lark proceeded o brood them in the rear half of the nest, ignoring the remaining two which seemed eager to be fed, opening wide their mouths repeatedly. The cock announced his arrival by uttering a low warble, the signal for the hen to leave the nest, and he then fed the nestlings shown in the illustration.

JOHN ARMITAGE.

FIRECREST IN HAMPSHIRE.

At about 11 a.m. on April 13th, 1934, I watched an adult Firecrest (*Regulus i. ignicapillus*) at the edge of a birch wood on Hengistbury Head.

I had it under observation for at least half an hour, in a very good light. At times it was less than four feet away.

I wrote down a full description while it was in view, and made a rough sketch of its head. Besides the typical black and white head-markings, I particularly noticed its light forehead, greenish mantle, light underparts and the yellowish patch on the side of its neck. While I was watching it, a hen Goldcrest came into view several times, so that my notes were made largely by comparing the two. Though tame it was extremely restless.

On April 14th the Rev. F. C. R. Jourdain and I again saw it in the same place for a short time, at about 3.45 p.m. Mr. Jourdain thought it was probably a male, as its reddish orange crown was so bright.

Four occurrences are mentioned in *The Birds of Hampshire and the Isle of Wight* (Kelsall and Munn, 1905), but several have been recorded since then. K. B. Rooke.

SONG-THRUSH ALIGHTING ON SEA AND KILLED BY LESSER BLACK-BACKED GULL.

Whilst travelling between Finisterre and Ushant on the evening of April 3rd, 1934, on the direct Gibraltar-Plymouth route, my attention was drawn to a Song-Thrush (*Turdus philomelus* ? subsp.), which had been following the ship for the past twenty minutes. This bird had suddenly flown forward, hovered over the donkey-engines on the forward well-deck as if contemplating landing, circled round the ship and joined up with a small company of seven Sky-Larks (*Alauda a. arvensis*) which were flying close alongside to starboard.

After flying steadily with the Larks for a few moments the Thrush dropped gently down on to the sea with outspread wings, and appeared to be riding the water comfortably enough till a Lesser Black-backed Gull (*Larus f. fuscus*) swooped down upon it from behind, killed it with a sharp blow delivered at the back of the head, and carried it off.

The Thrush's action in alighting on the water seemed quite deliberate and the bird did not appear unduly exhausted. Had it not felt confident that landing on the sea was perfectly safe it seems likely that it would have chosen to land on the ship instead. It is noteworthy that, as in the case of a Redstart reported as alighting on the sea (*antea*, Vol. XXV., p. 80), there was a swell on the water but the surface was smooth. W. J. EGGELING.

BLACKBIRD'S NEST WITH SEVEN EGGS.

IT may be of interest to record that a Blackbird (*Turdus m. merula*) is now (May 10th, 1934) sitting on the unusual number of seven eggs, just outside Kegworth station (actually in Nottinghamshire). A. ROEBUCK.

[I have records of four other cases of seven eggs and two of eight.—F.C.R.J.]

JACK SNIPE IN INNER LONDON.

MR. F. A. RHODES, of 3, Charing Cross Road, W.C.1, brought to the Zoological Gardens on May 2nd, 1934, a Jack Snipe (*Limnocryptes minimus*) which he had picked up in Pall Mall the same day.

The bird had an injured wing, evidently having flown against a telegraph wire. D. SETH-SMITH.

[The Jack Snipe has very rarely been recorded for Inner London (see Vol. XXII., p. 242).—EDS.]

GLAUCOUS GULL IN CORNWALL.

As the Glaucous Gull (*Larus hyperboreus*) is only an irregular visitor to Cornwall it may be well to record an immature example that I saw on the shore north of Sennen Cove on March 25th, 1934. It was in a mob of other Gulls, Greater and Lesser Black-backs, Herring, Common and Black-headed, and as it stalked about among them, all except the Greater Black-backs, its compeers in size, edged away from it, careful to give it place. From a distance its freckled, creamy-buff coloration picked it out at once from the other Gulls, and in flight the absence of black in primaries and tail made it even more conspicuous. CHAS. OLDHAM.

ICELAND GULL IN HAMPSHIRE AND DORSET.

ON April 6th, 1934, at about 10 a.m., I watched an immature Iceland Gull (*Larus leucopterus*) on the sea off Branksome Chine, Poole, Dorset. It was resting on the water near some Herring-Gulls, several of which were immature, and so afforded good material for comparison. The following is a summary of my notes made at the time: About the same size as a Herring-Gull, certainly not larger. Noticeably white in comparison with the immature Herring-Gulls, showing, however, distinct ashy-brown markings on the mantle. No dark markings on the primaries. Bill—basal half, light; distal half, dark.

In flight it appeared very white, and as it got farther away the dark markings were lost to view, for after I had watched it for about five minutes it flew off towards Bournemouth Pier, and when it again settled on the water it was a mere speck, as seen through my telescope. In flying east it passed far over the Hampshire boundary, which is less than half a mile away.

From its close resemblance to the bird I saw at Bristol in the early part of 1933, I should say that it was in its second year.

Only three records are given in *The Birds of Hampshire and the Isle of Wight* (1905), and none in *The Birds of Dorset* (Mansel-Pleydell, 1888), though about four have occurred in the latter county since then. K. B. ROOKE.

ICELAND REDWINGS AND FAEROE SNIPE IN KENT.—Dr. J. M. Harrison records (*Ibis*, 1934, pp. 395-6) the occurrence of specimens of *Turdus musicus coburni* at Shoreham (Darenth Valley) on February 14th, and of a *Capella gallinago faeroeensis* near the same place in mid-December, 1925.

LONG-EARED OWL BREEDING IN ISLE OF MAN.—Lieut.-Col. H. W. Madoc informs us that on March 4th, 1934, he found a nest of a Long-eared Owl (*Asio o. otus*) in an old nest of a Magpie in the Isle of Man. It then contained six eggs. On March 26th there were six eggs and one newly-hatched chick. As incubation begins with the first egg as a rule in this species, and the eggs are laid at intervals of about 48 hours, this only gives approximately the incubation-period (31-32 days). Other observations give varying periods from 27 to 30 days.

Seven is an unusual number in England for this species, though recorded on several occasions, while eight eggs have been met with a few times. In France, Raspail states that out of eleven nests examined all contained seven eggs except one, which held eight! The date is also unusually early for this species, though clutches have been recorded as early as March 2nd.—F.C.R.J.

"TEMMINCK'S STINT" OBTAINED IN HEREFORDSHIRE—*Correction.*—In our issue for April, 1934 (Vol. XXVII., p. 340), a bird sent to the Museum, Hereford, as a Stint, was recorded as a Temminck's Stint, but unfortunately this was a wrong identification, and the bird, which we have now seen, was a Dunlin (*Calidris alpina*) in winter plumage.—EDS.

REVIEWS.

Bird-Life in the Isle of Man. By Colonel H. W. Madoc, C.B.E., M.V.O. pp. 200. 12 Plates from Photographs. (H. F. & G. Witherby). 6s. net.

THIS little book is not a history of the birds of the Isle of Man, although the matter is arranged systematically under species, but is a popular account of the birds which the author has met with personally on the island. It is written in a colloquial style and in many respects recalls the works of Joseph Whitaker on Nottinghamshire birds. Every page carries on it the mark of the field naturalist; not necessarily a scientific ornithologist, but at any rate the work of a man who knows a bird when he sees it. Comparing it with Ralfe's *Birds of the Isle of Man* (1905) and its supplement (1924), it will at once be seen that many species which have been recorded on more or less satisfactory evidence, but did not come within the observation of the author, have been omitted. On the other hand not only has Colonel Madoc brought his book up to date, but he has added no fewer than eleven species which are not included in the other works. All but one of these are "sight-records", but in some cases the writer had already made the acquaintance of the species in other lands, and in others the birds themselves were seen under such favourable circumstances, or were so readily identifiable, that there can be little doubt as to their identity. The one case in which the specimen was actually obtained is rather an interesting one, a Red-necked Phalarope (*Phalaropus lobatus*) having been killed accidentally at the Point of Ayre Lighthouse on September 23rd, 1926. All previous records of Phalaropes from Man have belonged to the Grey Phalarope (*Ph. fulicarius*). The other species which do not figure in P. G. Ralfe's books (although some are mentioned in supplementary papers in *British Birds*, XXV., pp. 18-21, etc.) are Lapland Bunting, Marsh-Tit, Wood-Lark, Montagu's Harrier, White-eyed Pochard, Long-tailed Duck, Velvet-Scoter, Eider, Great Snipe, and Little Gull. We venture to doubt the statement that Mr. L. Sim had met with the Great Snipe in Japan and was therefore competent to identify it (p. 169). "Least fearless", on p. 29, should apparently be "most fearless".

As a handy guide to the birds likely to be seen on the island and their status, this unpretentious little book can be heartily recommended and is likely to prove extremely useful. F. C. R. JOURDAIN.

LOCAL REPORTS.

Transactions of the Norfolk & Norwich Naturalists' Society for 1932-33.

THIS issue contains an interesting article on Harriers by Major Anthony Buxton, who has made a special study of these birds at Horsey. The article is illustrated with a number of very excellent photographic plates, of which those showing phases of the "pass" of prey from the cock to the hen are particularly interesting. In some notes from Horsey on various birds, contributed by the same author to the yearly report, we find mention of a Ferruginous Duck (*Nyroca nyroca*) being shot at flight and of two or three more being seen a few days later, but no dates are given.

Report of the Cambridge Bird Club, 1933.

THIS Report is reduced to a few pages as the Club has decided to finance the publication of a county list, the preparation of which is now advanced. In a short list of birds for 1933 we note an Alpine Pipit (*Anthus s. spinoletta*) on the Sewage Farm on December 20th; the Hobby (*Falco s. subbuteo*) breeding in the same wood as in 1932, three young being reared; a pair of Montagu's Harriers at Wicken Fen, but they did not breed; a nest of Garganey (*Anas querquedula*) found; and a small colony (six nests were seen) of Black-headed Gulls (*Larus ridibundus*) nesting in Burwell Fen—the first record of breeding for the county. It is curious that the bird was first recorded as nesting in Oxfordshire in the previous year.

Transactions of the Carlisle Natural History Society, 1933.

THESE transactions contain an interesting annotated list of birds noted in Carlisle by B. Johnston; a paper by the same author on the Barnacle-Goose on the English Solway, in which references are made to past changes in rivers and marshes and their effect on the status of this goose on the Solway, and a short article on the Buzzard by E. Blezard.

Journal of the Derbyshire Archæological & Natural History Society, 1933.

THIS contains an "Ornithological Record" for 1932-33 by the Rev. F. C. R. Jourdain. In an interesting note on a Wagtail roost in Dr. Hollick's garden at Ashbourne, it is stated that a few Pied Wagtails were noticed before March 22nd when 20-30 arrived and roosted in a large rhododendron. They increased until April 13th, when there were 50-60, and two Yellow Wagtails. On April 19th it was estimated that there were 200 Wagtails, but by the 27th they had all gone. The Yellow Wagtails were never in great numbers though as many as 34 were once counted, and the association of the two species at the roost is interesting. Mr. C. B. Chambers gives an account of a Tufted Duck taking its brood a long and intricate journey across country. Exceptional records for the county are a Velvet-Scoter shot on the Trent in November, 1932, and two Little Stints identified at Williamthorpe Reservoir in September.

Report of the Marlborough College Natural History Society for 1933.

THIS Report contains a lengthy list of birds and is embellished with reproductions of photographs taken by boys of the Stone-Curlew and of nests of Lapwing and Coot. It is stated that Herring and Common Gulls now very frequently pass over Marlborough, whereas formerly they were seldom seen, and that Black-headed Gulls now frequent the north end of the Salisbury Avon Valley in considerable flocks in winter, though previously the bird was regarded as an uncommon visitor.

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CONTENTS OF NUMBER 2, VOL. XXVIII., JULY 2, 1934.

PAGE
Birds of Inner London. By A. Holte Macpherson 34
Recoveries of Marked Birds 39

Notes :—

Rose-coloured Starling at Lundy 49
Chaffinch Nesting in Disused Swallow's Nest (W. J. Eggeling) . 49
Two Nests of Golden-crested Wrens in One Tree (A. Astley) ... 49
Woodchat seen in Sussex (G. Crowe) 50
Blackbird utilizing Discarded Nest (R. D. English) 50
A Census of Nightingales in S. Worcestershire (A. J. Harthan) 50
Brood of Five Common Buzzards (S. Lewis) 52
An Unrecorded Essex Heronry (Dr. J. W. Campbell) 52
Little Bittern seen in Devonshire (M. J. Ingram) 53
" Paget's Pochard " and Ferruginous Duck in Norfolk (B. B. Rivière) 53
Kentish Plovers in Dorset and Hampshire (K. B. Rooke) ... 53
Little Stint in Sussex in Winter and Spring (N. F. Ticehurst) 54
Dates of Laying in a Gullery (H. W. Robinson) 55

Short Notes :—

Spruces Ringed by Woodpeckers. Spoonbill seen in Carmarthenshire. Two Moorhens Laying in Same Nest ... 55

BIRDS OF INNER LONDON.

BY

A. HOLTE MACPHERSON.

Additional Species.

The Northern Guillemot (*Uria a. aalge*), caught in Finsbury on December 15th, 1933 (Vol. XXVII., p. 263), makes an addition to the list published in this magazine in 1929 (Vol. XXII., pp. 222-244) and subsequently extended.

Additional Notes in 1933.

For some years the Greenfinch (*Chloris ch. chloris*) has been increasing steadily in London. In March I counted a flock of twenty-six on one tree in a busy Kensington thoroughfare.

The Golden-crested Wren (*Regulus r. anglorum?*) was seen by Mr. E. G. Pedler in Kensington Gardens on January 24th and February 13th, and by Miss S. Cropper on October 21st in Hamilton Terrace, Holland Park.

Birds which appeared to be Greenland Wheatears (*Œnanthe œ. leucorrhoa*) arrived in some numbers on May 3rd in Regent's Park (D. Seth-Smith, *Report to H.M. Office of Works*). There can be little doubt that some of these birds pass regularly each spring through this park, which, until the last few years, has received but little attention.

A Redstart (*Phœnicurus ph. phœnicurus*) was seen on April 24th by Miss M. Rew in Regent's Park, and another by Mr. E. G. Pedler, on August 20th, in Kensington Gardens. It is rather surprising that others were not noticed, for in Richmond Park the species was more numerous during the summer than I have ever known it.

A pair of British Great Spotted Woodpeckers (*Dryobates major anglicus*) excavated a nesting-hole 25 feet from the ground, in the trunk of a chestnut, in the grounds of Holland House. On May 5th, when their work appeared to be complete, they were attacked and ousted by four Starlings, which subsequently continued the battle for possession among themselves. If the Woodpeckers endeavoured to nest elsewhere, I failed to discover the spot.

The Cuckoo (*Cuculus c. canorus*) was heard, as usual, in spring; and others were seen between July 23rd and August 8th in St. James's and Hyde Parks, and Kensington Gardens, while the Hon. Guy Charteris informed me that he saw one (August 2nd) in Berkeley Square.

Col. A. E. Hamerton saw a Sparrow-Hawk (*Accipiter n. nisus*) chased by Black-headed Gulls in Regent's Park on December 19th (D. Seth-Smith, *t.c.*).

A Goosander (*Mergus m. merganser*) was observed by Mr. E. G. Pedler on December 14th. It was a red-headed bird and was on a small piece of open water at the east end of the Serpentine, most of which was then covered with ice. The presence of a crowd of tame ducks and gulls had given it confidence and it was floating a few yards from the shore.

On October 7th, Mr. E. M. Nicholson saw an immature Red-breasted Merganser (*Mergus serrator*) feeding among ducks, close to the bridge in St. James's Park (C. S. Bayne, *Report to H.M. Office of Works*). This species is not known to have visited this park before, though it has been recorded once from the Serpentine.

A Turtle-Dove (*Streptopelia t. turtur*) was noted on May 15th in Regent's Park (D. Seth-Smith, *t.c.*). Two Snipe (*Capella g. gallinago*) were seen by Capt. Sir Bryan Godfrey-Faussett, R.N., on December 21st in Hyde Park, not far from the Marble Arch (*Times*, December 23rd, 1933).

A Woodcock (*Scolopax r. rusticola*) was noticed flying across Green Park, towards Piccadilly, on the morning of March 29th, by Mr. Willoughby Radcliffe and two friends, one of whom, like Mr. Radcliffe, was a sportsman well acquainted with Woodcock. Both these gentlemen noticed that it was a very dark bird.

In connexion with the Scandinavian Lesser Black-backed Gull (*Larus f. fuscus*), seen over the Thames at Millwall by Mr. H. G. Attlee on November 4th (*antea*, p. 305), it may be remembered that it was this reach of the river which produced the first record of this species from Inner London. About the date of Mr. Attlee's observation several of these birds were to be seen in the London district.

The occurrence of a Landrail (*Crex crex*) on Duck Island, St. James's Park, on December 5th, was reported by Mr. Hinton, the bird-keeper. Curiously enough, in November, 1932, a bird of this species was found caught in a wire enclosure on this island.

RECOVERY OF MARKED BIRDS.

* Indicates that particulars have already been published of previous recoveries of the same bird.

Carrion-Crow (*Corvus c. corone*).

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RT.6673	Penicuik (Midlothian), 1.6.33, for Midlothian O.C.	Near where ringed, 21.4.34, by D. Stewart.
RT.7733	Rugby (Warwick.), 4.6.33, for Rugby School.	Desford (Leics.), —.8.33, by H. Clarke & Sons.
RS.2321	Skokholm (Pembs.), 16.5.33, by R. M. Lockley.	Angle (Pembs.), 5.2.34, by A. Rickard.

Rook (*Corvus f. frugilegus*).

RINGED AS FULL-GROWN.

AG.377	Great Budworth (Ches.), 9.7.32, by A. W. Boyd.	Near where ringed, —.3.33, by ringer.
AG.389	Ditto 9.7.32	Barnton (Ches.), 20.3.33.

(*e*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

RR.8813	Chipping Norton (Oxon.), transported to and released at Oxford [19 m. S.E.], 24.2.33, by Oxford Orn. Soc.	Stone (Staffs.), 29.3.34, by by R. Johnson.
RS.5479	Ditto 24.2.33	Hitchin (Herts.), 25.4.34, by Dr. Foster.
AK.344	Chipping Norton, released Cambridge, 30.1.31, by T. H. Harrisson.	Near Manningtree (Essex), 22.1.34, by Miss Johnson.

Jackdaw (*Colœus m. spermologus*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

RT4359	Culham (Berks.), 29.5.32, by R. J. Spittle.	Henley-on-Thames (Oxon.), 26.5.34, by Capt. Noble.
RT.6288	Lisnagry (Limerick), 12.5.33, by M. Goodbody.	Clonlara (Limerick), 6.4.34, by S. Campbell.

(*b*) RECOVERED WHERE RINGED.

RT.4271	Dalston (Cumb.), 2.6.32, by R. H. Brown.	14.4.34.
RS.2771	Malvern (Worcs.), 22.5.30, by W. A. Cadman.	14.3.34.
RR.359	Leamington (Warwicks.), 23.5.27, by P. K. Chance.	25.4.34.
RR.3746	Canterbury (Kent), 1.6.30, for St. Edmund's Sch.	—.12.33.
RR.1408	Ditto 22.5.27.	17.4.34.
RT.4241	Ditto 28.5.32.	18.4.34.

RINGED AS FULL-GROWN.

RS.5464	Chipping Norton (Oxon.), transported to and released Oxford, 24.2.33, by Oxford Orn. Soc.	Near Arnhem (Guelderland), Holland, —.4.34, by N. H. Museum, Leiden.
RT.4257	Charing (Kent), 14.4.33, for St. Edmund's Sch.	Where ringed, 2.5.34, by G. Hines.

Starling (*Sturnus v. vulgaris*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
FA.469	Ullswater (Cumb.), —.5.33, by H. J. Moon.	Dalemain (Cumb.), 3.4.34, by E. Gardner.
FE.499	Ullswater (Westmor.), —.6.33, by H. J. Moon.	Tirril (Westmor.), 3.1.34, by R. Dent.
LF.477	Wolsingham (Durham), 14.5.32, by R. Martinson.	Stanhope (Durham), 14.5.34, by L. Vickers.
BF.958	Heslington (Yorks.), 11.5.33, for Bootham Sch.	Murton (Yorks.), 17.4.34, by C. Creaser.
FA.80	Doveridge (Derby.), 11.5.33, by H. Bamford.	Marston Montgomery, (Derby.), 30.5.34, by Mrs. Weston.

(*b*) RECOVERED WHERE RINGED.

FA.697	Ullswater (Westmor.), —.5.33, by H. J. Moon.	7.4.34.
P.1465	Great Budworth (Ches.), 17.5.32, by A. Boyd.	15.12.33.
R.1278	Ditto 20.5.31.	25.2.33.
R.1302	Ditto 20.5.31.	10.12.32; 7.1.33.
S.4658	Ditto 17.5.30.	24.1.33.
S.4662	Ditto 17.5.30.	29.1.33.
S.4665	Ditto 17.5.30.	6.3.33.
T.4404	Ditto 18.5.29.	16.6.33.
GF.64	Ditto 6.7.32.	24.1.33.
N.3887	Oxford, 16.5.32, by O.O.S.	1.1.34.
TF.34	Laindon (Essex), 16.7.33, by L.N.H.S.	15.3.34.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

FB.703	York, 21.1.34, for Bootham Sch.	Pocklington (Yorks.). 10.4.34, by J. R. Stubbs.
FB.746	Ditto 16.2.34	Bolsward (Friesland), Holland, 31.5.34, by N. H. Museum, Leiden.
GF.210	Great Budworth (Ches.), 18.1.33, by A. W. Boyd.	St. Helen's (Lancs.), 13.2.34, by J. Grice.
YF.547	Ditto 7.12.33	Niederung, East Prussia, 21.5.34, by Vogelwarte, Rossitten.
P.7504	Ditto 30.1.34	Zidikai, N. Lithuania, 29.4.34, by Prof. Ivanauskas.
N.2448	Ditto 17.1.26	Nordenham, Oldenburg, Germany, 30.4.34, by Vogelwarte, Heligoland.
FB.100	Peover (Ches.), 5.11.33, by A. G. Haworth.	Runcorn (Ches.), 9.4.34, by R. Johnston.
FB.107	Ditto 1.11.33	Dassow, Mecklenburg, —.4.34, by Vogelwarte, Rossitten.
BF.100	Birmingham, 30.10.33, by W. E. Kenrick.	Tamworth (Staffs.), 24.1.34, by Inspector Brooks.
FL.357	Ditto 15.12.33	Forncett-St.-Peter (Norfolk), 24.4.34.

Starling (*continued*).

(*c*) RECOVERED AWAY FROM WHERE RINGED (*continued*).

No.	*Ringed.*	*Recovered.*
BF.110	Birmingham, 15.11.33, by H. G. Alexander.	Nuneaton (Warwicks.), 25.1.34, by W. Beesley.
VF.542	Malvern (Worcs.), 23.2.33, by P. E. A. Morshead.	Stratford-on-Avon, 1.3.34, by Miss Bell.
VF.579	Ditto 3.3.33	Droitwich (Worcs.), —.1.34, by D. Copson.
FL.677	Evesham (Worcs.), 7.12.33, by A. J. Harthan.	Near Walsall (Staffs.), 15.1.34, by W. Pritchard.
R.5667	Oxford, 2.11.30, by Oxford Orn. Soc.	Cumnor (Berks.), 6.2.34, by J. Clayton.
P.6778	Ditto 16.2.32	Whaddon (Bucks.), —.3.34, by R. Meacham.
FL.200	Ditto 22.1.34	Vieksniai, Lithuania, 15.4.34, by Prof. Ivanauskas.
R.5537	Ditto 31.10.31	Marienburg, East Prussia, 23.4.34, by Vogelwarte, Rossitten.
FH.705	Ditto 23.11.33	Bartenstein, East Prussia, 15.3.34, by Vogelwarte, Rossitten.
V.8660	Ditto 12.12.28	Starogard, Pomerellia, Poland, 20.3.34, by F. Duwe.
AN.9436	Ditto 25.1.33	Enköping, Upsala, Sweden, 11.4.34, by Sec. British Legation.
FN.805	Friern Barnet, London, 20.1.34, for Lond. N.H.S.	Chelmsford (Essex), 11.2.34, by J. Thompson.
FK.680	Ditto 5.11.33	Luton (Beds.), —.1.34, by W. Lawrence.
FN.778	Ditto 14.1.34	Duxford (Cambs.), 6.4.34, by A. Webb.
FK.609	Ditto 28.10.33	Alphen-on-Maas, Guelderland, Holland, —.3.34, by M. Spoon.
T.3598	Appledore (Kent), 21.12.31, by C. B. Ticehurst.	Stone - in - Oxney (Kent), 27.4.34, by M. Titterton.
XF.79	Seaton (Devon.), 14.12.33, by A. Mayo.	Near Somerton (Som.), 19.4.34, by H. Gould.
FD.73	Belfast (Antrim), 14.12.33, by J. Cunningham.	Cambusbarron (Stirling.), 27.4.34, by V. Gianandra.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Kilbarchan (F. J. Ramsay).		
AN.7180	11.2.33	17.11.33
Carlisle (J. N. D. Smith).		
*V.9523	23.2.30	14.2.34
Wilmslow (E. Cohen).		
*T.9922	14.7.29	—.5.34
Great Budworth (A. Boyd).		
P.1302	11.4.32	24.1.33
R.1169	2.3.31	25.2.33
R.1176	3.3.31	20.1.33
S.4435	18.11.29	7.1.33
T.4041	25.8.28	6.1.33
T.4115	15.12.28	22.1.33
T.4195	7.1.29	21.1.33
T.4321	26.2.29	16.12.32 ; [Jan., May, Oct., Dec., 1933
GF.140	9.12.32	7.6.33

Starling (*continued*).

(*d*) RECOVERED WHERE RINGED (*continued*).

No.	*Ringed.*	*Recovered.*
Evesham (A. J. Harthan).		
VF.155	26.1.33	19.12.33
Birmingham (W. Kenrick).		
TF.171	17.3.33	13.11.33
Oundle (J. Fisher).		
AN.8396	30.12.32	8.1.34
Oxford (O.O.S.).		
G.5488	19.1.29	21.12.33
P.2621	22.12.30	31.10.33
P.2754	8.2.32	20.2.34
P.6685	25.1.32	19.2.32; 22.12.33
P.6711	24.1.32	30.3.34
P.6755	27.11.31	24.12.33
AN.9433	24.1.33	5.2.34
LF.673	9.11.32	29.12.33
Salisbury (O.O.S.).		
U.9696	23.12.29	21.4.34

No.	*Ringed.*	*Recovered.*
Kelling (R. M. Garnett).		
S.7516	11.3.31	24.1.34
Bluntisham (E. Peake).		
P.5784	24.7.31	Jan., Feb., 1934
P.7241	10.1.33	19.1.33; [Jan., Feb., 1934
P.7256	28.3.33	26.1.34
*T.5106	7.2.29	5.3.34
*T.5109	13.2.29	21.12.33
*T.5129	10.3.29	25.1.34
Buckhurst Hill (L.N.H.S.).		
AN.3327	20.12.31	22.5.34
Friern Barnet (L.N.H.S.).		
FK.615	28.10.33	—.5.34
Shanklin (J. F. Wynne).		
P.7738	13.12.31	23.3.34

Greenfinch (*Chloris c. chloris*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
NC.703	Duddingston (Midlothian), 18.5.33, by D. Bryson.	Portobello (Midlothian), —.1.34, by T. Spence.
F.B.32	Doveridge (Derby.), 20.6.33, by H. Bamford.	Near Stoke-on-Trent (Staffs.), 28.1.34, by C. Allcock.
XF.213	Cumnor (Berks.), 28.5.33, for Oxford Orn. Soc.	Oxford, 20.12.33, by W. A. Cadman.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

FC.759	Shipley (Yorks.), 28.6.33, by C. W. Smith.	Near Stratford-on-Avon (Warwicks.), 13.1.34, by P. Carr.
FP.596	Malvern (Worcs.), 28.2.34, by P. E. A. Morshead.	Near Lichfield (Staffs.), 26.3.34, by T. Garbett.
FP.529	Ditto 26.2.34	Wakefield (Yorks.), 25.4.34, by J. Wilcock.
FH.693	Beckley (Oxon.), 18.12.33, for Oxford Orn. Soc.	Lakenheath (Suffolk), 15.3.34, by W. Rolph.
N.3872	Reading (Berks.), 14.12.32, for Oxford Orn. Soc.	Hanwell, London, 20.4.34, by O. Bishop.
FJ.899	Branscombe (Devon.), 25.12.33, by P. E. A. Morshead.	Exeter (Devon.), 20.1.34, by G. Densumbe.
FJ.833	Ditto 24.12.33	Avonmouth (Glos.), 20.1.34, by *Cage Birds*.
FJ.1000	Ditto 29.12.33	Dawlish (Devon.), 28.2.34, by D. Weston.
FJ.798	Ditto 24.12.33	Whitchurch Canonicorum (Dorset.), 28.4.34, by E. Spiller.

Greenfinch (*continued*).

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Shipley (C. W. Smith).		
VF.763	12.2.33	10.3.33 ; [31.12.33 ; 10.3.34
VF.786	19.2.33	19.3.33 ; 25.3.34
VF.809	19.2.33	Feb., Mar., [1933 ; 10.3.34
VF.834	25.2.33	Feb., Mar., [1933 ; 10.3.34
VF.850	25.2.33	26.2.33 ; 3.2.34
VF.851	25.2.33	25.3.33 ; 1.1.34
VF.864	26.2.33	14.1.34 ; 10.3.34
VF.878	26.2.33	Mar., 1933 [(2) ; Feb., Mar., 1934
YF.804	12.3.33	Mar., Ap., [1933 ; 20.1.34
YF.815	12.3.33	25.3.34
YF.836	12.3.33	11.3.34
YF.854	19.3.33	11.3.34
YF.930	28.4.33	1.1.34
Great Budworth (A. Boyd).		
*J.5661	11.5.30	1.1.33
*J.5992	23.6.30	26.2.33
*J.6122	16.5.31	20.3.33
K.8678	6.2.31	29.1.33
K.8695	18.1.31	24.2.31 ; 30.1.33
K.8764	18.1.31	3.2.33
*K.8779	27.1.31	29.4.33 ; [Dec., 1933 (3)
L.6006	28.12.31	Dec., 1931 [(3) ; Jan., 1932 (3) ; 4.11.32 ; [Jan., Feb., 1933
L.6008	28.12.31	30.12.31 ; [1.1.32 ; 13.12.33
L.6023	29.12.31	16.1.32 ; 21.1.33
L.6087	10.1.32	18.1.33
L.6113	16.1.32	Jan., 1932 [(2) ; 24.5.32 ; 2.2.33
L.6122	28.1.32	2.2.33
L.6145	26.1.32	27.1.32 ; 17.1.33
L.6159	28.1.32	31.1.32 ; [17.1.33 ; 23.12.33
L.6235	15.2.32	2.2.33
L.6241	15.2.32	8.1.33
L.6291	26.2.32	19.2.33
L.6305	4.3.32	9.2.33
L.6339	23.3.32	10.2.33

No.	*Ringed.*	*Recovered.*
L.6341	21.3.32	23.3.32 ; [20.11.32 ; 6.1.33
L.6342	21.3.32	21.5.32 ; 7.12.32
L.6365	9.4.32	21.5.32 ; [11.1.33 ; 11.4.33
GF.33 [L.6300]	1.3.32	29.5.32 ; 6.1.33
GF.39	26.6.32	9.2.33
GF.163 [L.6297]	29.2.32	10.3.32 ; [24.12.32 ; Jan., 1933 (3)
WF.162	4.2.33	Feb., 1933 [(2) ; 22.3.33 ; 22.7.33
WF.202	12.2.33	13.12.33
WF.249	21.2.33	5.3.33 ; 15.12.33
WF.266	25.2.33	Dec., 1933 (2)
WF.323	4.3.33	27.11.33
Birmingham (W. Kenrick).		
TF.169	12.3.33	26.3.33 ; 14.12.33
Oxford (O.O.S.).		
P.3968	6.1.33	28.2.33 ; 18.12.33
*LF.675 [L.4623]	9.2.32	15.2.34
NB.558	24.2.33	2.4.34
TF.206	23.1.33	Jan., Feb., [Mar., 1933 ; 8.2.34
TF.213	26.1.33	Jan., Feb., [1933 ; 14.2.34
TF.220	5.2.33	Feb., Mar., 1934
TF.505	6.2.33	Feb., 1933 [(4) ; Dec., 1933 (2)
TF.509	7.2.33	13.2.34
Beckley (O.O.S.).		
TF.330	28.2.33	18.12.33
Bluntisham (E. Peake).		
J.5280	16.2.31	23.1.34
L.3193	23.2.31	3.1.34
*L.3232	1.3.31	Jan., 1934 (3)
L.3993	8.3.31	15.1.34
*L.4079	20.4.31	16.12.33
L.5211	1.5.31	30.12.33 ; 2.1.34
N.3142	6.1.32	29.12.33
N.3150	11.1.32	6.3.34
N.3253	14.2.32	23.1.34
NR.562	5.3.33	14.12.33
*TU.384	16.2.31	Jan., Feb., 1934
Shanklin (J. F. Wynne).		
SF.694	11.3.33	25.3.34

Greenfinch (*continued*).

(*c*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

No.	*Ringed.*	*Recovered.*
GF.162	Great Budworth (Ches.), released 4½ m. N.W., 11.1.33, by A. Boyd.	Where ringed, 14.1.33, by ringer.
NL.901	Marlow (Bucks.), released 6 m. S.S.W., 17.1.33, by H. Pease.	Where ringed, 25.1.33, by ringer.
NM.916	Ditto released 7 m. away, 14.1.33.	Where ringed, 15.3.33, by ringer.
WF.467	Hemsby (Norfolk), released 3 m. away, 5.2.33, by J. Ferrier.	Where ringed, 6.2.33, by ringer.
MF.632	Branscombe (Devon.), released 4 m. W.N.W., 7.1.33, by P. Morshead.	Beer (Devon.), 9.2.34, by C. Thomas.

Goldfinch (*Carduelis c. britannica*).

L.1989	Beckley (Oxon.), 29.10.31, ad., for Oxford Orn. Soc.	Where ringed, 23.2.34, by ringer.

Linnet (*Carduelis c. cannabina*).

M.87	Kirkham (Yorks.), 20.5.33, young for Bootham Sch.	Near Oulton Broad (Suffolk), 21.4.34, by B. Youngs.

Chaffinch (*Fringilla c. cælebs*).

RINGED AS NESTLINGS.

FA.17	Stanway (Glos.), 21.5.33, by Hon. G. Charteris.	Where ringed, 20.3.34, by ringer.
CF.440	Strood (Kent), 18.5.33, for Sutton Valence Sch.	Higham (Kent), 30.4.34, by W. Brice.
M.4900	Battle (Sussex), 7.6.32, by H. Whistler.	Where ringed, 1.1.34, by C. Jacoby.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

FM.342	Great Budworth (Ches.), 20.1.34, by A. W. Boyd.	Goederede, Zuid Holland, 27.3.34, by K. van der Wende.
FF.862	Redditch (Worcs.), 10.2.34, by Hon. G. Charteris.	Stanway (Glos.), 23.2.34, by T. Buggins.
FF.890	Ditto 10.2.34	Ditto 23.2.34.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
	Arnside (J. Barnes).	
NJ.813	4.1.33	20.12.33
	Great Budworth (A. Boyd).	
*J.6125	17.5.31	28.6.33
WF.328	9.3.33	10.3.33; 2.11.33
	Malvern (P. Morshead).	
N.6783	30.7.32	22.4.34
	Evesham (A. J. Harthan).	
VF.723	1.4.33	5.1.34

No.	*Ringed.*	*Recovered.*
	Oxford (O.O.S.).	
N.3944	24.10.32	21.2.34
	Bluntisham (E. Peake).	
*L.3991	8.3.31	25.1.34; 21.3.34
	Battle (H. Whistler).	
M.4908	18.2.33	14.3.34
	Lisnagry, Limerick (M. Goodbody).	
CF.697	14.5.33	7.5.34

Tree-Sparrow (*Passer m. montanus*).

RINGED AS NESTLINGS.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
K.8928	Great Budworth (Ches.), 4.6.31, by A. W. Boyd.	26.6.31; 19.6.33.
K.8929	Ditto 4.6.31.	30.6.31; 17.7.33.
L.6392	Ditto 30.5.32.	13.5.33.

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

H.5789	Great Budworth (Ches.), 28.7.29, by A. W. Boyd.	23.4.33.
L.6424	Ditto 8.6.32.	29.7.33.

Yellow Bunting (*Emberiza c. citrinella*).

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*	*No.*	*Ringed.*	*Recovered.*
Great Budworth (A. W. Boyd).			L.5970	5.11.31	18.1.33
D.5021	17.2.26	10.1.34	L.6039	31.12.31	10.5.33
H.5397	28.5.29	12.12.33	L.6081	9.1.32	11.1.32;
*H5946	6.3.30	3.12.33			7.1.33
J.5649	8.5.30	28.11.33	L.6161	18.1.32	6.5.33
L.5861	9.8.31	6.5.33	L.6367	22.4.32	5.1.33

Reed-Bunting (*Emberiza s. schœniclus*).

No.	*Ringed.*	*Recovered.*
L.2476	Wilmslow (Ches.), 27.1.32, ad., by E. Cohen.	Where ringed, 3.2.32; March, 1934 (2), by ringer.

Sky-Lark (*Alauda a. arvensis*).

NA.904	Malvern (Worcs.), 25.2.33, ad., by A. Morrison.	Where ringed, 21.1.34, by P. E. A. Morshead.
L.2007	Beckley (Oxon.), 1.12.31, ad., for Oxford Orn. Soc.	Where ringed, 23.2.34, by ringer.

Meadow-Pipit (*Anthus pratensis*).

H.6971	Oxford, 24.1.31, ad., for Oxford Orn. Soc.	Dec., 1932; Jan., Feb., 1933; 20.12.33, by ringer.

Great Tit (*Parus m. newtoni*).

M.2409	Peover (Ches.), 10.12.32, ad., by A. G. Haworth.	Nantwich (Ches.), —.12.33, by H. Walley.

Blue Tit (*Parus c. obscurus*).

N.2466	Kilbarchan (Renfrew.), 31.12.31, ad., by F. J. Ramsay.	Balfron (Stirling.), 17.2.34, by Miss McAllister.

Pied Flycatcher (*Muscicapa h. hypoleuca*).

No.	*Ringed.*	*Recovered.*
K.4649	Rydal (Westmor.), 20.6.32, young, by Miss Higginbotham.	Ambleside (Westmor.), 25.5.34, by M. Gladding.

Willow-Warbler (*Phylloscopus t. trochilus*).

NS.403	St. Catherine's Light (I.O.W.), 11.4.34, on migration, by J. F. Wynne.	Williton (Som.), 2.5.34, by J. R. Townson.

Mistle-Thrush (*Turdus v. viscivorus*).

RINGED AS NESTLING.

AP.3382	Langwathby (Cumb.), —.6.32, by H. J. Moon.	Thenay (Loir-et-Cher), France, 26.11.33, by *Chasseur Francais.*

RINGED AS FULL-GROWN.

AP.6920	Shipley (Yorks.), 15.4.33, by C. Wontner-Smith.	Where ringed, 27.1.34, by ringer.
YF.794	Ditto 5.3.33.	Ditto 16.12.33; 27.1.34.

Song-Thrush (*Turdus ph. clarkei*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

FA.637	Penrith (Cumb.), —.5.33, by H. J. Moon.	Hospital (Limerick), 25.1.34, by J. Fogarty.
FD.629	Ditto —.5.33	Ballybunion (Kerry), Winter 1933, by P. Buckley.
T.3357	Ullswater (Cumb.), —.4.29, by H. J. Moon.	Dalemain (Cumb.), Summer 1933, by E. L. Gardner.
CF.188	Wensleydale (Yorks.), 27.4.33, for Bootham Sch.	Near Penzance (Cornwall), 9.1.34, by Mrs. Johns.
R.1200	Great Budworth (Ches.), 26.4.31, by A. W. Boyd.	Near Oldham (Lancs.), —.4.34, by J. Tate.
CF.950	Bealings (Suffolk), 2.5.33, by A. Mayall.	Near Cirencester (Glos.), 30.1.34, by R. Brain.
FC.246	Canterbury (Kent), 24.5.33, for St. Edmund's Sch.	Near Lannion (Côtes-du-Nord), France, —.1.34, by Y. le Mével.

(*b*) RECOVERED WHERE RINGED.

FG.325	Penrith (Cumb.), —.6.33, by H. J. Moon.	5.4.34.
FB.540	Near York, 13.6.33, for Bootham Sch.	26.4.34.
YF.928	Shipley (Yorks.), 30.4.33, by C. W. Smith.	3.4.34.
S.4588	Northwich (Ches.), 26.4.30, by A. W. Boyd.	16.12.33.
S.4829	Great Budworth (Ches.), 6.6.30, by A. W. Boyd.	18.3.33.
P.1374	Ditto 24.5.32.	18.1.33.
FC.255	Charing (Kent), 28.5.33, for St. Edmund's Sch.	21.1.34.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

AN.4380	Bridge of Allan (Stirling.), 21.3.32, by Miss Bickersteth.	Longford, Ireland, 24.2.34, by Miss Ferrall.
TF.137	Birmingham (Warwicks.), 28.1.33, by W. E. Kenrick.	Balsall Heath (Warwicks.), 23.2.34, by Mrs. Chester.

Song-Thrush (*continued*).

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Wilmslow (E. Cohen).		
AN.4167	16.7.31	15.3.34
Great Budworth (A. Boyd).		
*T.4049	30.9.28	15.3.33
*T.4316	23.2.29	Jan., 1933 (3)
S.4528	9.3.30	Mar., Ap., 1933
*R.1147	4.1.31	Dec., 1932 ; Jan., Mar., Oct., Nov., 1933
GF.67	17.10.32	Jan., 1933 (2) ; 13.12.33
GF.189	12.1.33	25.1.33 ; 4.12.33
GF.288	21.1.33	Jan., 1933 (4) ; 6.12.33
GF.312	21.1.33	Jan., 1933 (4) ; 6.12.33
Birmingham (W. Kenrick).		
TF.105	27.11.32	12.1.33 ; 27.1.34
TF.136	28.1.33	13.12.33
Cheltenham (Cheltenham Coll.).		
FG.547	13.7.33	25.3.34
Bluntisham (E. Peake).		
P.7238	13.12.32	8.5.33 ; 23.1.34

Blackbird (*Turdus m. merula*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
AP.2114	Almondbank (Perths.), 28.5.33, by Lord Scone.	Blairgowrie (Perths.), 29.3.34, by W. Hendry.
S.1821	Penrith (Cumb.), —.5.29, by H. J. Moon.	Horseleap (Westmeath), 21.2.34, by Mrs. Craven.
S.5502	Ditto —.6.29	Melkinthorpe (Westmor.), —.8.33, by E. L. Gardner.
X.4973	Ullswater (Cumb.), —.5.26, by H. J. Moon.	Stainton (Cumb.), 2.3.34, by E. L. Gardner.
FD.589	Ditto —.5.33	Ballydehob (Cork), 28.1.34, by Miss Collins.
XF.966	Ingleton (Yorks.), —.5.33, by H. J. Moon.	Arkholme (Lancs.), 2.4.34, by J. Stewart.

(*b*) RECOVERED WHERE RINGED.

T.8018	Perth, 12.5.29, by Perth. N.H.S.	22.3.34.
PF.315	Ingleton (Yorks.), —.6.32, by H. J. Moon.	24.4.34.
AN.4334	York, 18.6.31, for Bootham Sch.	28.3.34.
FB.344	Ditto 26.5.33.	12.4.34.
*T.6049	Great Budworth (Ches.), 29.5.29, by A. W. Boyd.	26.2.33; 29.5.33 ; 10.12.33.
R.1340	Ditto 19.6.31.	24.2.33.
EF.342	Alethorpe (Norfolk), 29.4.33, by R. Noel-Hill.	5.2.34.
T.9536	Canterbury (Kent), 26.6.29, for St. Edmund's Sch.	16.5.34.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

SF.131	Wilmslow (Ches.), 12.10.32, by E. Cohen.	Hayfield (Derby.), 26.2.34, by Miss Gee.
R.1409	Great Budworth (Ches.), 10.3.32, by A. W. Boyd.	Near Warrington (Lancs.), 28.3.34, by J. Leah.
SF.435	Brent Knoll (Som.), 14.8.32, by E. G. Holt.	Ballingeary (Cork), 23.2.34, by P. Hoare.

Blackbird (*continued*).

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Dornoch (E. Cohen).		
NF.545	17.7.32	6.2.34
Broughty Ferry (T. L. Smith).		
T.5432	16.2.29	9.1.34
Kilbarchan (F. J. Ramsay).		
AN.7161	25.2.32	31.12.33
Holy Island (O.O.S.).		
MF.181	27.9.32	—.5.34
Shipley (C. W. Smith).		
*VF.781	19.2.33	16.12.33 ; 7.3.34
YF.823	17.3.33	28.6.33 ; [10.1.34 ; 10.3.34
*YF.838	17.3.33	Jan., Mar., 1934
Gt. Budworth (A. W. Boyd).		
*R.1161	1.3.31	31.12.31 ; [29.2.32 ; Jan., Feb., Ap., July, [Dec., 1933
*R.1171	2.3.31	Jan., Feb., [1933 ; 13.12.33
R.1181	9.3.31	6.12.33
*R.1349	30.7.31	26.2.33 ; 10.12.33
R.1350	30.7.31	Jan., Feb., 1933
R.1352	2.8.31	28.1.33
*R.1357	29.8.31	Jan., 1933 (3)
R.1358	25.10.31	Jan., Feb., [1933 ; 14.12.33
R.1359	26.10.31	Jan., 1933 [(4) ; Dec., 1933 (2)
R.1360	28.10.31	Dec., 1931 [(2) ; Feb., Mar., 1932 ; [Jan., Feb., 1933 ; 9.12.33
R.1377	8.2.32	Feb., Mar., [1932 ; 11.11.32 ; Jan., Feb., [1933 ; Nov., Dec., 1933
R.1380	14.2.32	19.2.32 ; [Jan., Mar., 1933
R.1384	10.11.31	31.12.31 ; 9.3.33
*R.1387	22.11.31	Dec., 1932 [(3) ; Jan., Feb., 1933
R.1388	6.12.31	Feb., Mar., [1932 ; 13.11.32 ; [Jan., Feb., 1933
R.1391	18.12.31	23.12.31 ; 4.3.32 ; 21.1.33
R.1401	20.2.32	Feb., Mar., [1932 ; Jan., Feb., 1933
R.1404	3.3.32	Mar., 1932 [(3) ; 9.12.32 ; Jan., Feb., [Ap., 1933 ; Dec., 1933 (3)
R.1410	11.3.32	14.3.32 ; 29.1.33
*S.4539	19.3.30	Jan., Feb., 1933
*T.4052	31.10.28	Jan., Feb., 1933
*T.4330	1.3.29	Jan., Feb., [1933 ; 11.12.33
*W.5091	22.1.27	9.12.32 ; 21.1.33 ; 6.12.33
W.5428	27.11.27	22.1.33
*W.5431	17.12.27	4.12.32
GF.101	26.11.32	Jan., Feb., [1933 ; 13.12.33
GF.292	21.1.33	Jan., Feb., [1933 ; Dec., 1933 (3)
VF.997	26.1.33	23.2.33 ; 14.12.33
Peover (A. G. Haworth).		
AN.4669	27.1.33	Jan., 1933 [(3) ; 25.12.33
AN.4672	18.1.33	27.1.33 ; 14.12.33
AN.4680	7.1.33	27.3.33 ; 28.1.34
Birmingham (W. Kenrick).		
BF.138	7.7.33	Jan., Feb., 1934
BF.143	10.7.33	Dec., 1933 [(2) ; Jan., Feb., Mar., 1934
SF.788	16.10.32	9.12.32 ; [Jan., Mar., 1934
SF.797	6.11.32	12.2.33 ; [Dec., 1933 ; Jan., Mar., 1934
TF.113	11.12.32	19.2.33 ; 1.1.34
Stanway (G. Charteris).		
AP.5776	7.1.33	7.1.34
Blenheim (O.O.S.).		
MF.200	2.3.33	5.3.34
TF.627	2.3.33	5.3.34
Oxford (O.O.S.).		
AN.9538	28.2.33	2.2.34

Blackbird (*continued*).

(*d*) RECOVERED WHERE RINGED (*continued*).

No.	*Ringed.*	*Recovered.*
Bagley Wood (O.O.S.).		
AN.6881	14.1.33	Jan., Mar., [1933 ; 11.2.34
AN.6890	7.2.32	21.2.32 ; 21.1.34
*AN6911	21.2.32	5.2.33 ; 12.12.33
Bluntisham (E. Peake).		
*P.7166	11.1.32	21.12.33

No.	*Ringed.*	*Recovered.*
Cambridge (Sanctuary Club).		
*L.1770	26.1.31	4.12.32
L.1780	27.1.31	Jan., Feb., [1931 ; 29.1.33
P.3768	7.1.32	Feb., 1932 [(7) ; Feb., Mar., 1933
P.3799	7.3.31	Mar., 1931 [(3) ; 29.1.33
AN.3057	16.3.32	25.1.33
Shanklin (J. F. Wynne).		
P.9266	12.12.32	24.3.34
Belfast (J. Cunningham).		
RF.148	15.1.33	—.4.34

(*e*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

No.	*Ringed.*	*Recovered.*
P.3766	Cambridge, released 2¼ m. away, 21.2.33, by Sanctuary Club.	Where ringed, 7.3.33, by ringer.

Robin (*Erithacus r. melophilus*).

RINGED AS NESTLING.

(*b*) RECOVERED WHERE RINGED.

NW.932	Stanway (Glos.), 30.5.33, by G. Charteris.	10.4.34.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

MH.313	York, 3.3.34, for Bootham Sch.	Wigginton (Yorks.), 2.4.34, by G. Howard.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Kilbarchan (F. J. Ramsay).		
N.2463	30.12.31	9.1.32 ; —.2.34
N.5178	3.3.33	20.3.34
Arnside (J. A. G. Barnes).		
*H.6562	12.12.30	Dec., 1932 [(5) ; 10.9.33
L.1610	6.1.32	9.1.33
L.1620	8.1.32	Dec., 1932, [1933 ; Jan., 1933, 1934
NJ.786	23.12.32	Dec., 1932, [1933 ; Jan., 1933, 1934
NJ.791	27.12.31	31.12.32 ; [17.1.33 ; 9.9.33
NM.974	17.1.33	20.12.33
NM.975	11.1.33	9.1.34

No.	*Ringed.*	*Recovered.*
Shipley (C. W. Smith).		
NR.124	28.1.33	19.2.33 ; 24.12.33
NR.127	29.1.33	5.3.33 ; 20.1.34
*NR.137	29.1.33	17.12.33 ; [Jan., Feb., 1934
NR.157	29.1.33	Mar., 1934 (2)
*NR.197	5.3.33	Jan., Mar., 1934
*NR.213	9.3.33	Mar., 1934 (2)
NR.215	11.3.33	Mar., Ap., [1933 ; Mar., 1934 (3)

Robin (*continued*).

(*d*) RECOVERED WHERE RINGED (*continued*).

No.	*Ringed.*	*Recovered.*
Wilmslow (E. Cohen).		
*K.6005	7.8.30	6.5.33; [11.11.33; —.2.34
L.2473	23.1.32	Jan., Feb., [1932; —.2.34
*NJ.837	9.8.32	Ap., May, [1933; 21.1.34
Great Budworth (A. Boyd).		
L.5731	18.7.31	Dec., 1932 [(4); Jan., 1933 (2)
*L.5948	25.9.31	Nov., Dec., [1932; Jan., Feb., Ap., [1933; 7.11.33
L.5982	3.12.31	Dec., 1931; [Jan., Feb., May, 1932; [27.11.32; Mar., Ap., 1933; [Nov., Dec., 1933
L.5993	19.12.31	Feb., Mar., [Ap., 1932; Dec., 1932 (3)
L.6287	24.2.32	21.1.33
NJ.306	30.9.32	Oct., Nov., [Dec., 1932; Jan., Feb., 1933; [9.11.33
NJ.375	22.1.33	Jan., Feb., [1933; 7.12.33
Evesham (A. J. Harthan).		
NR.116	9.2.33	16.11.33
Birmingham (W. Kenrick).		
NK.929	27.9.32	Oct., Nov., [Dec., 1932; Jan., Feb., [Oct., Dec., 1933; 5.1.34
NL.48	16.10.32	21.12.32; [Feb., Mar., Oct., Nov., 1933
NL.80	18.2.33	Mar., 1933 [(12); Dec., 1933 (5)
NL.81	18.2.33	28.1.34
Birmingham (H. G. Alexander).		
NR.329	9.3.33	28.1.34

No.	*Ringed.*	*Recovered.*
Rugby School.		
M.3661	24.11.31	26.11.33
Oxford (O.O.S.).		
NB.439	15.11.32	3.3.34
NB.552	2.3.33	Mar., 1933 [(4); 18.11.33; 3.2.34
Bagley Wood (O.O.S.).		
L.4664	28.1.33	12.12.33
L.4671	5.2.33	Feb., Mar., [1933; 25.11.33
Bluntisham (E. Peake).		
*N.2063	14.12.31	Dec., 1933 (2)
N.2064	14.12.31	Jan., Feb., [Ap., 1932; 18.12.33; [15.1.34
N.5157	28.2.33	20.2.34
NK.660	12.10.32	19.1.33; [15.12.33; 20.2.34
NK.663	8.11.32	7.2.33; [Nov., Dec., 1933
Cambridge (Sanctuary Club).		
*L.2168	8.2.31	Jan., Feb., [Mar., 1933
L.2253	17.11.31	Nov., Dec., [1931; Jan., Feb., Mar., [Nov., Dec., 1932; Jan., [Feb., Mar., 1933
L.2259	21.11.31	Jan., Feb., [Mar., Nov., Dec., 1932; [Jan., 1933
L.9750	1.3.32	Mar., 1933 [(6); 12.2.32
Addlestone (P. Hollom).		
F.9382	13.5.33	26.12.33
Battle (H. Whistler).		
NR.637	28.4.33	5.3.34

(*e*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

No.	*Ringed.*	*Recovered.*
L.2268	Marlow (Bucks.), released 2 m. N.E., 14.1.33, by H. Pease.	Where ringed, 3.2.33, by ringer.

Hedge-Sparrow (*Prunella m. occidentalis*).

RINGED AS NESTLING.

(*b*) RECOVERED WHERE RINGED.

NR.259	Shipley (Yorks.), 24.5.33, by C. W. Smith.	3.9.33 ; 10.1.34.

RINGED AS FULL-GROWN.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Kilbarchan (F. J. Ramsay).		
N.5172	12.2.33	28.3.34 ; 6.4.34
Ullswater (H. J. Moon).		
*TZ.744	17.3.31	27.2.34
Shipley (C. W. Smith).		
NR.123	28.1.33	9.11.33
*NR.202	12.3.33	7.1.34 ; 24.3.34
NR.228	4.4.33	Ap., 1933 (2) ; 20.1.34
Wilmslow (E. Cohen).		
NK.491	27.9.32	12.12.33
NK.497	22.10.32	8.3.33 ; 24.2.34
NR.474	18.5.33	Nov., Dec., [1933 ; 27.1.34
Peover (A. G. Haworth).		
NM.188	16.2.33	26.11.33
Great Budworth (A. Boyd).		
*J.6051	25.7.30	Feb., Mar., 1933
*K.8632	1.1.31	Feb., Ap., 1933
L.5700	12.7.31	25.7.31 ; [11.12.32 ; 4.3.33
L.5950	25.9.31	26.10.31 ; [28.1.32 ; 16.12.32
*L.5952	28.9.31	3.3.33 ; 4.12.33
*L.5967	30.10.31	10.11.32 ; [Jan., Mar., May, [Dec., 1933
L.6043	31.12.31	Jan., Feb., [1932 ; Feb., July, 1933
L.6350	29.3.32	23.4.32 ; 9.5.33
L.6366	14.4.32	18.4.33
Birmingham (W. Kenrick).		
*NK.915	26.9.32	28.1.34 ; 3.3.34
NL.46	11.10.32	Oct., Dec., [1932 ; Mar., Oct., Nov., [1933 ; Jan., Mar., 1934
NL.51	5.12.32	8.12.32 ; [Mar., Oct., Nov., 1933 ; [Feb., 1934 (4)
NL.56	13.12.32	5.12.33 ; [Jan., Mar., 1934
NL.77	11.2.33	27.11.33
NL.94	18.3.33	18.2.34
NL.96	25.3.33	Dec., 1933 (2)
NL.97	25.3.33	3.3.34
Oxford (O.O.S.).		
*NM.328 [L.1313]	25.1.31	Nov., 1933 [(2) ; Jan., Feb., 1934
Bagley Wood (O.O.S.).		
L.4676	5.3.33	8.4.34
Bluntisham (E. Peake).		
L.4001	10.3.31	24.1.34
Cambridge (Sanctuary Club).		
*L.1763	26.1.31	Feb., Mar., 1933
L.9741	27.2.32	7.3.32 ; 11.3.33
*NL.760 [L.1791]	2.2.31	Dec., 1932 [(2) ; Feb., Mar., 1933

Swallow (*Hirundo r. rustica*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

MC.726	Skirwith (Cumb.), —.6.33, by H. J. Moon.	Dalmellington (Ayr.), 29.5.34, by P. Mulligan.
N.1636	Yarm (Yorks.), 24.8.31, for Lt.-Col. Pollitt.	Birmingham (Warwicks.), 3.5.34, by S. Jones.

(*b*) RECOVERED WHERE RINGED.

N.5092	Great Budworth (Ches.), 26.6.32, by A. Boyd.	16.5.33.
NW.195	Tenterden (Kent), 11.6.33, by N. F. Ticehurst.	19.5.34.

NOTES

ROSE-COLOURED STARLING AT LUNDY.

While at Lundy, Bristol Channel, on June 18th, 1934, Messrs. F. R. Willcox, G. Stretton Smith, A. P. Harman and myself had excellent views of a Rose-coloured Starling (*Pastor roseus*), which, from its fine plumage, appeared to be an adult male. It was first noticed on the half-way wall at a distance of about 20 yards and it then flew out of sight beyond the quarter-wall. A short while later it was again watched at close quarters about the half-way wall and on boulders along the east-side slopes, when the crest, the glossy black head, wings and tail and the rose-pink upper parts and breast were easily noted. Though for the most part silent its call-note on one occasion, when taking wing, closely resembled that of the Starling (*Sturnus vulgaris*).

Although there do not appear to be any authentic records during recent years, this species used apparently to be a regular spring visitor to the Island (see Loyd, *Lundy Hist. and Nat. Hist.*, 1925, p. 153). H. H. Davis.

CHAFFINCH NESTING IN DISUSED SWALLOW'S NEST.

On May 18th, 1934, I was shown at Christon Bank Farm, Northumberland, by R. Robinson, Jr., the nest of a Chaffinch (*Fringilla c. cœlebs*) in an unusual situation. It was built within the disused nest of a Swallow (*Hirundo r. rustica*), placed against one of the beams supporting the roof of an empty engine-house. Entry to the room was effected through an open half-door. The nest was constructed of the usual materials, and its rim protruded only just above the top of the Swallow's cup. From the ground neither the nest nor the sitting female were visible. When I visited the nest the bird had been brooding four eggs for just over a week. There appeared to be plenty of more normal nesting sites in the near vicinity. W. J. Eggeling.

TWO NESTS OF GOLDEN-CRESTED WRENS IN ONE TREE.

For more than thirty years a large yew tree in a Westmorland garden has almost invariably held the nest of a pair of Golden-crested Wrens (*Regulus r. anglorum*). In June of this year

(1934) two pairs of the birds have nested in this tree. The nests are on the same side of the tree, and are about six feet apart, the lower being about ten feet from the ground. The birds have been watched at both nests, and on June 7th an inspection showed that both contained eggs, one eight and the other ten. It is surely unusual for two pairs of these birds to nest in such close proximity. A. ASTLEY.

WOODCHAT SEEN IN SUSSEX.

ON May 16th, 1934, while walking along Bremere Rife, at Pagham, my attention was drawn by the peculiar dipping flight of a dark-headed bird with pied plumage. It was comparatively tame and allowed me to examine it with glasses on successive perches at a distance of ten yards, when I made out that the back of the head and nape were a rusty brown, the forehead, sides of neck and wings brownish-black, the latter with a white wing-bar and the under-parts white. It had the typically hooked upper mandible of a Shrike and I have no doubt that it was a Woodchat (*Lanius senator*). It eventually crossed the stream, which was too deep for me to follow, and I lost sight of it, but I had had it under observation for quite seven minutes. GEOFFREY CROWE.

BLACKBIRD UTILIZING DISCARDED NEST.

ONE day during April the nest of a Blackbird (*Turdus m. merula*) was found on a garden path at Sutton Valence School, Kent, having been pulled out and thrown there by someone unknown. The finder picked it up and placed it in the corner of a wooden rack built against the wall of the Fives Courts. A few days later it was taken possession of by a Blackbird and when the school re-assembled on May 4th she was sitting on three eggs. A week later she deserted, no doubt owing to the constant traffic past the rack and the noise of the Fives' players. I have not been able to ascertain the original site of the nest, but the probability is that it was at no great distance and, of course, it is possible that it was the original owner that laid in it after the move.

R. D. ENGLISH.

A CENSUS OF NIGHTINGALES IN S. WORCESTERSHIRE.

DURING May, 1934, I made a careful census of singing Nightingales (*Luscinia m. megarhyncha*) in a rectangular area approximately five by four miles, including some 12,000 acres. This area is north-west of Evesham in south Worcestershire, comprising the south portion of low hills rising to 300 feet high, which extend from Birmingham and lie between the Severn and river Avon valleys. Geologically the country consists of Blue Lias clay with surface drifts of Keuper marls. The steep banks facing the river valleys are wooded with oak as the predominant tree, and skirted with thickets of low bushes of thorn and gorze.

The area contains about 1,000 acres of woodland, represented by ten large woods and fourteen spinneys under one acre in area. The thorny scrub-land surrounding the wooded hill slopes is about 300 acres. Probably two-thirds of the land under farming is pasture.

Altogether forty Nightingales were heard singing. Each bird was checked three times between May 4th-25th and many were checked more often. The following details of distribution were noted :—

Thirty birds in scrubland of thorn and gorse bushes.
Five birds in gardens attached to houses. One garden lies in the centre of a village, and this is the first year that Nightingales (two) have been heard there.
Five birds in roadside spinneys under one acre in area.
Nineteen birds sang from territories adjacent to streams of running water. The others were short distances from small pools of stagnant water which, I imagine, dry up quickly.

Divided into the following categories there appear to be :—

In the whole area—one Nightingale in 300 acres.
In woodland plus any adjacent thickets—one in 23 acres.
In open, thorny thickets—one in 10 acres.

This suggests that, in this area, Nightingales show a very marked preference for the open, sunny thickets of thorn, with patches of tufty grass between. Their liking for this type of territory was shared by about a dozen Nightjars (*Caprimulgus c. europæus*) and Grasshopper-Warblers (*Locustella n. nævia*). Mention of these two latter species will, perhaps, give a better idea of the area than can be expressed in words.

Some half-dozen pairs used to frequent spinney woodland bordering a small estate adjacent to the town of Evesham. As the pasture near these spinneys has been ploughed up for vegetable growing, Nightingales have decreased, though the spinneys remain. One was present last year, but I have heard none this year.

It is probable that the number of Nightingales in the area surveyed is as great, or larger, than any other area of similar size in this county, owing to the large area of derelict land that they seem to favour. Perhaps other bird-watchers will undertake similar surveys to afford figures for comparison.

It was repeatedly noted that Nightingales sang during the sunset chorus of other birds but then fell silent until they began again between 10.30 and 11.30 p.m.

The first survey and subsequent check of the results obtained was done on foot or bicycle. The third check was done by bicycle and car. All took place between 11 p.m. and 2 a.m. The weather was calm and the birds could be heard singing from a distance up to half a mile. A. J. HARTHAN.

BROOD OF FIVE COMMON BUZZARDS.

A FRIEND of mine climbed to the nest of a Common Buzzard (*Buteo b. buteo*) in a pine tree in Somerset on June 2nd, 1934, and found that it contained five strong and healthy young Buzzards. Five is a fairly frequent number of eggs with this species in Somerset. STANLEY LEWIS.

AN UNRECORDED ESSEX HERONRY.

ON March 25th, 1934, I was taken by Mr. L. V. G. Barrow to investigate a number of nests of the Heron (*Ardea c. cinerea*) which he had seen last winter on Rolls Farm, near Tollesbury, Essex. On our approach, nine Herons left the nests, which are placed in two adjacent elms in a hedgerow bounding a field sloping down to a stretch of fresh marsh, with the sea-wall and Blackwater estuary beyond. We counted twelve and five nests in the two elms respectively. Across the field in the next hedge, which is not part of Rolls Farm, there were four more nests also in elms. I paid another visit to the heronry on April 7th, 1934, and again counted twenty-one nests, the counts being thirteen, five, two and one, for the four occupied trees. Fifteen Herons were disturbed from the nest trees. It was impossible to determine how many nests were actually in use. Mr. Burr, of Rolls Farm, informs me that to his personal knowledge the heronry has been in existence on the present site for thirty-four years and, according to local report, for many years previously. Last year there were also twenty-one nests.

This heronry; which is situated in the parish of Tollesbury, on the north shore of the Blackwater estuary, about one-and-a-quarter miles south-west of Tollesbury village, has not hitherto been recorded.

Since the village of Goldhanger is only approximately two-and-a-half miles from the present site, the presence of a heronry at Rolls Farm may provide a possible explanation for the alleged site at Goldhanger referred to, in square brackets, in the *British Birds* Census of Heronries (*antea*, Vol. XXII., p. 299). I wish to acknowledge my thanks to Mr. L. V. G. Barrow for informing me of the existence of the heronry at Rolls Farm. JAMES W. CAMPBELL.

[For previous correspondence regarding a possible heronry in the neighbourhood of Tollesbury, see Vol. XXV., pp. 160-1.—EDS.]

LITTLE BITTERN SEEN IN DEVONSHIRE.

WHILE fishing on the Tavy in Devonshire during the last week in April, 1934, I saw on two occasions a Little Bittern (*Ixobrychus minutus*), on one of which it flew past me at close range in bright sunlight. It had been noticed several times previously by other fishermen and on one occasion it was seen to perch in a tree. There are usually a good many people fishing on the Tavy and no doubt the open nature of the river and the lack of reeds accounted for the bird being so often disturbed. MERVYN J. INGRAM.

"PAGET'S POCHARD" AND FERRUGINOUS DUCK IN NORFOLK.

A DRAKE hybrid Ferruginous Duck × Common Pochard (Paget's Pochard) was shot at Hickling on December 2nd, 1933, and presented by Lord Desborough to the Norwich Museum. I did not see this bird until its return from the taxidermists some months later, so was unable to record it in my "Ornithological Report for Norfolk" for 1933. This appears to be the ninth Paget's Pochard which has been killed in Norfolk, five being in the Norwich Museum collection.

I learn from Major Anthony Buxton that a female Ferruginous Duck (*Nyroca nyroca*) was shot at Horsey in December, 1932. This also was not recorded in my notes for that year. B. B. RIVIÈRE.

[A reference to the Ferruginous Duck at Horsey was made (*antea*, p. 31) but no date was available.—EDS.]

KENTISH PLOVERS IN DORSET AND HAMPSHIRE.

As only three Kentish Plovers (*Charadrius a. alexandrinus*) have been obtained or seen in Dorset, so far as is known, it is worth recording that on April 27th, 1934, I had one under almost continual observation for over four hours on the south side of the entrance to Poole Harbour.

After satisfying myself as to its identity, I rang up Dr. A. C. Coles of Bournemouth, and he kindly came over with his wife to confirm my identification. Fortunately the bird remained in the same place. It was feeding with a small party of Ringed Plovers and afforded excellent chances of observation at close range. As it lacked any bright head-markings, and its half-collar was brown, it was undoubtedly a female. Besides the more obvious field-characters, we especially noticed its relative length of leg ; the remarkable difference of its note from that of the Ringed Plover also drew my attention.

The next day it had gone, though the Ringed Plovers were still there.

It is interesting to note that a Kentish Plover was seen in what appears to be the same place on April 24th, 1925 (*antea*, Vol. XX., p. 227).

After this experience I was much surprised to meet with two female Kentish Plovers near Mudeford, Christchurch, Hants., on the afternoon of April 30th, 1934. They were feeding on the sand in exactly the same place in which Dr. A. C. Coles has seen one, on two occasions in September.

Fortunately I had only just left another ornithologist, Mr. R. Dobson, a little way along the beach, so I immediately called him. Up to then I had seen only one bird, but he found that there was also a second. He is thoroughly familiar with this species and at once confirmed my identification.

The Rev. F. C. R. Jourdain went to look for them the next day, but, as in the case of the Poole bird, they had gone ; this shows how little delay there is on the spring passage.

Kentish Plovers have been recorded slightly more frequently from Hampshire than from Dorset. K. B. ROOKE.

LITTLE STINT IN SUSSEX IN WINTER AND SPRING.

BOTH mid-winter and spring occurrences of the Little Stint (*Calidris minuta*) seem to be sufficiently unusual as to be worth recording. On January 9th, 1934, I found one on the shore at Bulverhythe, between St. Leonards and Bexhill. When first seen it was by itself, feeding on the edge of the water, but when disturbed it joined some Ringed Plover that were feeding near by. On the 10th it was seen again by my son, when it was again in company with Ringed Plovers.

May 13th was a wonderful day for migrant waders at the Midrips on the Sussex border of Romney Marsh, thirteen species being identified, one of which was a single Little Stint in summer plumage. It was feeding beside one of the pools with a single Ringed Plover, and kept apart from the other waders. N. F. TICEHURST.

DATES OF LAYING IN A GULLERY.

As very little seems to have been recorded about the workings of a Gullery in spring, perhaps my experiences in a well-known north of England one this year may be of interest. In 1933, April 15th saw the first eggs of the Black-headed Gull (*Larus r. ridibundus*) deposited. This year (1934), although on the site in enormous numbers and the 15th and 16th were warm days with plenty of sunshine, they had not even constructed their nests, probably owing to the cold spell that followed. The first eggs of this species were deposited on April 25th, when only eight were seen, but on April 27th the number had increased to 59. On April 29th there had been a tremendous increase, 579 eggs being counted, of which 534 were singles and pairs and 15 clutches of three. The Sandwich Terns (*Sterna s. sandvicensis*) on the latter date had also started, when 19 scrapes contained one egg, and two a pair apiece. Of Lesser Black-backed Gulls (*Larus f. graellsii*) three single eggs were seen.

On April 30th the Black-headed Gulls' eggs were uncountable, one pair having a clutch of four. The Sandwich Terns' eggs had increased to over a hundred, and eight single eggs of the Lesser Black-backed Gull were seen.

Among other birds, Ringed Plovers (*Charadrius hiaticula*) had full clutches on April 25th and 27th, and Oyster-Catchers (*Hæmatopus o. occidentalis*) on the 30th.

Common, Arctic and Little Terns were showing no signs of nesting up to the last day of April. H. W. ROBINSON.

SPRUCES RINGED BY WOODPECKERS.—With reference to previous notes on this subject (Vol. XXVII., pp. 260-261 and 362), Dr. C. Chidell informs us that in July, 1922, he noticed a series of rings a few inches apart, about 40 or 50 in number, on the trunk of a spruce on the Schiahorn at Davos, Switzerland. A careful search in the neighbourhood resulted in the discovery of about half a dozen similar cases, all in spruce. No birds were seen at work, but Great Spotted and Green Woodpeckers were common in the Graubünden forests.

Spoonbill seen in Carmarthenshire.—Miss Ethel Falkener reports that a Spoonbill (*Platalea l. leucorodia*) was seen by a local gunner, who was fortunately unable to get a shot at it, on a salt-marsh in Carmarthenshire, in mid-February, 1934. She remarks that this is the third occurrence in South Wales in four years.

Two Moorhens Laying in Same Nest.—Although Moorhens (*Gallinula ch. chloropus*) not infrequently lay in one another's nests, judging from the evidence of the eggs, it is not always possible to prove that such cases are due to two or more hens laying together. Mr. W. H. Payn writes that there were three Moorhens' nests on a small pond on a Suffolk farm, of which one contained two eggs, the others being unfinished. Three days later there were eight eggs in the nest and when the banks were beaten three Moorhens were flushed from the brambles overhanging the water. On account of the drought many ponds in the district have almost dried up, and evidently two females had been forced to share the same pond and were laying in one nest. The eight eggs were of two distinct types, four being heavily marked and elongated and the rest exactly the opposite. Next day the eggs unfortunately disappeared.

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CONTENTS OF NUMBER 3, VOL. XXVIII., AUGUST 1, 1934.

PAGE

Notes on Territory in the Dartford Warbler. By L. S. V. Venables 58

The Races of the Ringed Plover. By G. Carmichael Low ... 64

Recovery of Marked Birds 67

Notes :—

The VIII. International Ornithological Congress 73

The British Trust for Ornithology 75

Birds on Lundy (D. Lack) 77

Nest Mortality (S. Baron) 77

The Clutch of the Golden Oriole (Major W. M. Congreve) ... 78

Apparent Polygamy of the Willow-Warbler (P. H. Trahair Hartley) 78

Strange Nest-Building by wounded Blackbird (Phyllis Gardiner) 79

Large Brood of Alpine Ring-Ouzels (Major W. M. Congreve) ... 81

Possible Black-eared Wheatear seen in Pembrokeshire (E. Mann) 81

A Census of Nightingales in N.W. Surrey (P. A. D. Hollom) ... 81

A Census of Nightingales in Gloucestershire (M. P. Price) ... 82

Some Breeding-Habits of Kingfishers (R. L. Brown) 83

Little Owls' Nest under Railway (H. S. Vickers) 84

Hobby in Cheshire (E. Cohen) 85

Scarce Birds in Lancashire (E. Hardy) 86

Ringed Plover's Double Brood (T. G. Powell) 86

Census of Breeding Skuas on Noss (L. S. V. Venables)... ... 87

Short Notes :—

Early Nesting of Corn-Bunting in Skye. Pied Flycatcher Nesting in Perthshire. Merlin Breeding on Dartmoor, Devon 87

Letter :—

An unrecorded Essex Heronry (E. M. Nicholson) 88

NOTES ON TERRITORY IN THE DARTFORD WARBLER.

BY

L. S. V. VENABLES.

(Plate 2.)

A RESIDENCE of three years in Surrey has enabled me to make some systematic observations on the territorial habits of the Dartford Warbler (*Sylvia undata dartfordiensis*). Several facts of interest have emerged, especially in view of the recent review of the territory theory by D. and L. Lack (1).

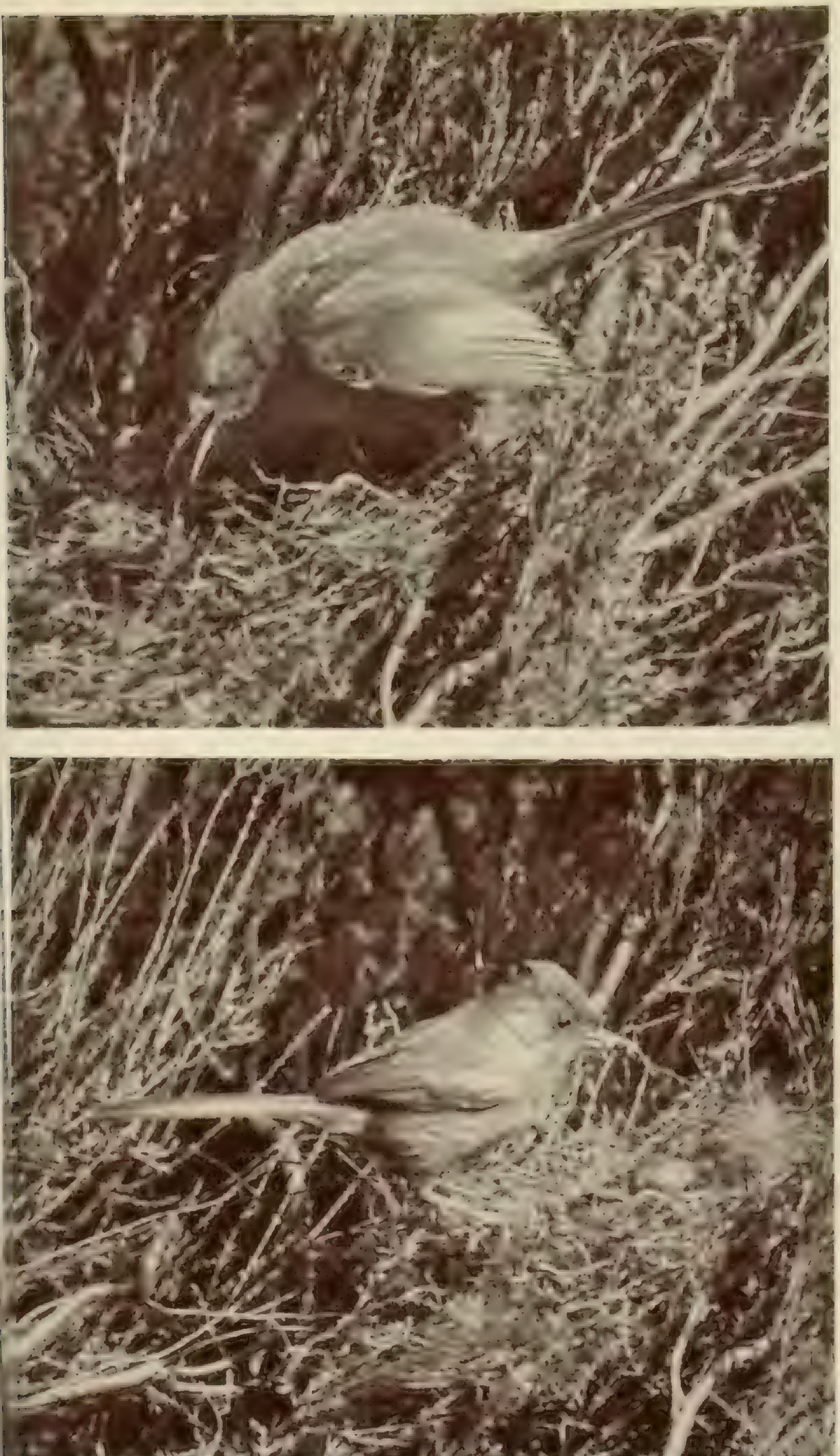
DENSITY OF THE BREEDING POPULATION.

During 1933 all the nests were located over a large area. The most densely populated portion is shown on Map 1, the nests being indicated by a black dot except for those to which special reference is made, which have distinctive signs. Excluding the area of burnt heather, there were 39 pairs on about 1,000 acres, or about one pair to each 25½ acres. But in places the density was much higher than this. Near the centre of the moor an area of about 280 acres held 22 pairs, about one pair to each 12.7 acres. Considering only the seven nests marked ‡, these occupied about 10.6 acres, and the density works out at one pair to each 1.5 acres. On the other hand, both here and in other parts of Surrey, large stretches of apparently similar heather were unoccupied or held only one or a few pairs. This strongly suggests that the species is not up to its optimum breeding population. This is probably due in part to its destruction in periodic hard winters, the birds recovering in the intervening years, and partly to the ravages of heath fires and egg collectors.

TERRITORY, "ANXIETY AREAS" AND FEEDING AREAS.

From the map, the random distribution of the pairs is at once apparent. Some nests were isolated, some spaced more or less equidistantly and some in clusters. It may be noted that there was little gorse present to influence the distribution, almost all the nests being built in the heather itself, which was fairly uniform throughout the area.

Some of the pairs were completely isolated, not only from their own but from all other species, this being a fairly common occurrence on the dry Greensand moors with their low bird population. In these cases the birds always stayed in the vicinity of their nests, and did not come into contact with other pairs of their own species. There was what might be termed an "anxiety area" round each nest. When I entered this area, the pair would come round scolding, and would accompany me until I left the area, when they would fly



DARTFORD WARBLER AT THE NEST.

Upper—Female waiting to clean nest—a momentary attitude.

Lower—Male feeding young.

(*Photographed by* H. N. Southern.)

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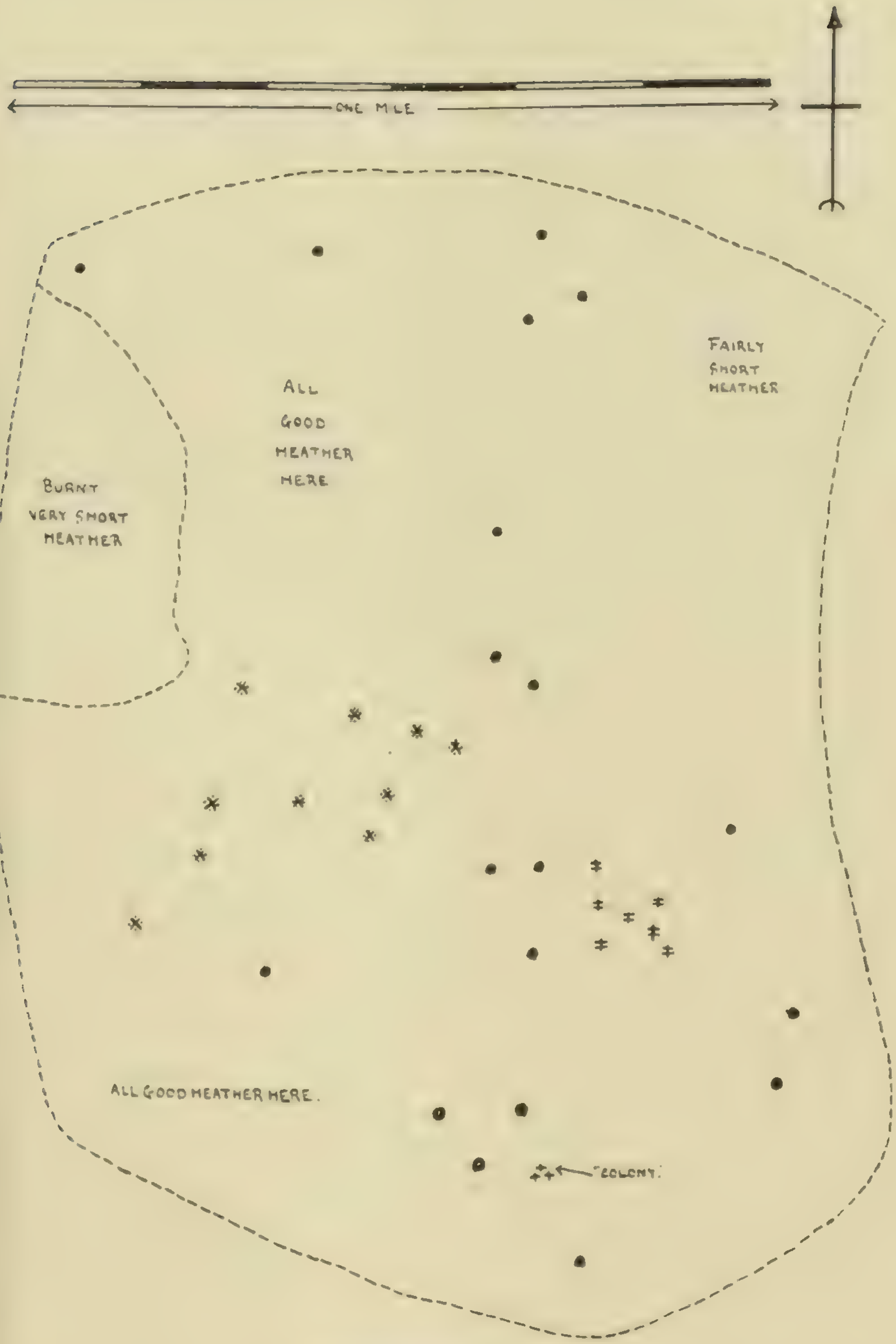


SKETCH-MAP NO. 1

Distribution of Dartford Warblers' nests on a Surrey Greensand moor.
May, 1933. L.S.V.V.

back towards their nest. Most of the feeding also appeared to be done in this area.

The breeding pairs marked * were fairly close together, and appeared to be convincingly territorial. One pair of birds would come out to meet me and, scolding incessantly, would escort me to about half-way between their nest and the next, where a second pair would appear and accompany me until near the third pair, when the latter would take over, and so on until I came to the last pair, which would accompany me some distance from their nest and I would be left alone. However, rather more patient watching revealed a discrepancy in the apparently territorial behaviour. On some occasions these " anxiety areas " overlapped, and there would be four birds scolding round me. On these occasions I observed no signs of frontier-fighting. Incidentally, frontier-fighting is recorded by Nethersole-Thompson (2) but I have never witnessed it, against either their own or any other species.

A much more marked case of the " anxiety areas " being shared by more than one pair of birds occurred with the three nests marked †, which were extremely close together. Here all six birds would come out to meet me and escort me clear of the last nest, in this respect being almost " colonial " rather than territorial in their behaviour. These three pairs fed all over their common " anxiety area ".

A situation intermediate between these two was found in the nests marked ‡. In this area I always had two or three pairs scolding me simultaneously, but not the whole group, since the birds on one outer edge did not come right across to the other side. Their "anxiety areas" did not extend so far as this. In this area the birds wandered here and there among the nests, finding adequate food on an area which might be supporting only one pair on an adjacent and similar part of the moor.

The Dartford Warbler is a member of a family of birds considered to be among the most territorial of all Passerines, and the male has a song which it utters from a conspicuous perch. If my observations on the species had been confined to places where it was distributed no more thickly than the pairs marked *, I might well have considered that the bird was strictly territorial, that this territory was used as a feeding area and that territorial behaviour set a limit to the density of the breeding population. But these conclusions are completely invalidated by the observations made where the birds were thickly distributed. In commenting on the Lacks' criticism that " there is no real evidence " that " the pugnacity of the male sets a definite limit to the number of pairs in a given area ", Huxley (3) considers that territories are partially compressible but their compressibility is not complete.

Eventually a limit must come. In the Dartford Warbler, however, this problem is met differently. If one may term the "anxiety area" and the feeding area a territory, the territories are not compressed when the birds are thickly distributed. Instead, they remain about the same size, but are shared, apparently without any friction, between two or three pairs. Hence territorial behaviour does not set a limit to the density of the breeding population in this species. Nor do the pairs which nest close together and share a feeding territory seem to meet any difficulty in finding adequate food for their young.

The Dartford Warbler is exceptional among Warblers in remaining in England throughout the winter, though the breeding areas themselves are often deserted. Possibly its territorial behaviour is also exceptional, but I cannot help wondering to what extent the observations made above apply to other so-called territorial Passerine species. I may specially refer to Brock's (4) observations on territory in the Willow Warbler, which are not dissimilar to my own on the Dartford Warbler.

The above observations refer primarily to the period after the nest has been built. Very possibly territorial behaviour has some significance in connexion with courtship and the selection of a mate, but detailed observations were not made on this point. However, it is clear that in the Dartford Warbler, territory does not limit the population density and does not restrict the feeding area. Perhaps, therefore, the species should not be termed territorial.

EARLY SPRING BEHAVIOUR.

The February fighting recorded by Howard (5), and attributed by him to territory, seems to be unknown on these Surrey moors. At that time I have seen a great deal of general excitement commencing (flying round, calling, singing, etc.), but I would very much hesitate before interpreting this as territorial behaviour, for in this district, at least, it is very unusual to find a pair breeding on the place where they spent the last part of the winter. Nesting territories are not usually claimed until the end of March or the beginning of April, and some pairs do not arrive until well into May. In my experience, no animosity is apparent between these early and late arrivals.

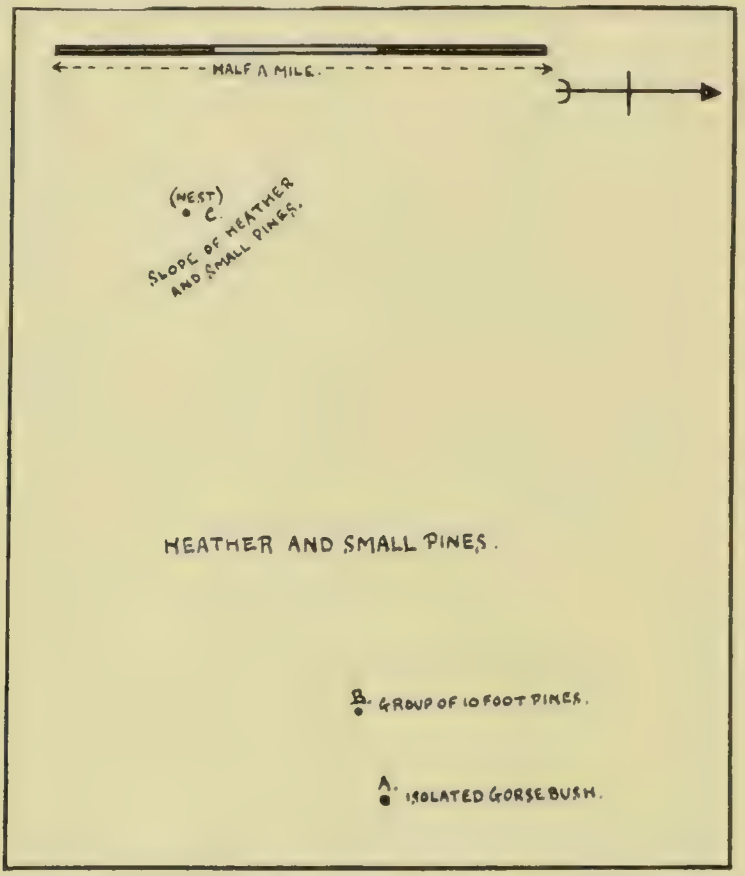
To determine when the nesting grounds are first occupied, a small moor, which was a great favourite with breeding Dartford Warblers, was carefully quartered at intervals during one winter and spring. In the previous year about 19 pairs had nested there.

November 24th.	One bird, apparently immature.
December 19th.	One pair.
January 25th.	None.
March 8th.	None.
March 28th.	None.
April 6th.	Six pairs.

Unfortunately, on April 10th, most of the moor was burnt and most of the birds disappeared again, except for three pairs which nested on the unburnt portion.

THE MOVEMENTS OF A SINGLE PAIR DURING THE YEAR.

One pair was resident in 1933 on a moor close to my house, thus enabling me to keep a fairly full account of their movements (see Map 2). The moor was quartered in May, 1933, and only one pair was located, breeding at C. The young left the nest shortly after the middle of the month, and the whole family then worked up to A, taking about 48 hours to cover the whole distance (of about 1,000 yards). Here they centred round an isolated gorse bush, from which the male frequently sang. After a stay of a few days, they all went back to the breeding territory, and a second nest was built from which



SKETCH-MAP NO. 2 L.S.V.V.

the young flew prematurely on June 25th. While the second brood was being reared, the young of the first brood were always to be found near the second brood nest; they usually skulked at the bottom of the heather, but occasionally would sit up high and scold. When the second brood left the nest, both adults and both broods again moved to A, this time taking about a week on the journey. They remained here until early autumn, after which they scattered about the east side of the moor (fairly near A, but remote from C).

On November 29th I carefully quartered the moor, and found them thinly distributed, but still on the eastern portion. During the winter I occasionally saw a pair (possibly always the same individuals) around the north and east of the moor, but did not quarter it again until early April, 1934. At that time a pair were scolding and singing from A and I could locate no other pairs. By the end of the month this pair had forsaken the gorse and were always to be seen and heard at the pines at B. I again thoroughly worked the ground on May 5th and found the B pair still present and another pair back at C, singing and scolding. On May 8th I found the nest and eggs of the C pair close to that of the previous year but the pair at B had disappeared. There was a little valley about two-thirds of a mile to the north-west where a pair had nested in 1930 and 1931, but not 1932. I carefully quartered this but they were not there. On May 12th, however, a pair had arrived here, and they subsequently bred. It seems probable that these were the pair originally at B.

The above notes do not apply to sufficient pairs to permit of any general conclusions. The most remarkable point was the removal of the 1933 pair from the nesting area, so soon as the young were fledged, to a spot about 1,000 yards away, where the male began to sing as if staking out a new breeding ground, a conclusion nullified by his subsequent return to the original breeding ground for the second nest. I may add that in Surrey the first brood young by no means invariably remain round the second brood nest.

REFERENCES.

1. Lack, D. and L. - - *Territory Reviewed*, antea XXVII., pp. 179-199.
2. Nethersole-Thompson, D. *The Field Habits, Status and Nesting of the Dartford Warbler*, "Oologists' Record", September, 1933.
3. Huxley, J. S. - - *A Natural Experiment on the Territorial Instinct*, antea XXVII., pp. 270-277, especially 276-277.
4. Brock, S. E. - - - *The Willow Wrens of a Lothian Wood*, "Zoologist", XIV., pp. 410-417, 1910.
5. Howard, H. E. - - *British Warblers*, Vol. IX., 1914.

THE RACES OF THE RINGED PLOVER.

BY

G. CARMICHAEL LOW.

LINNÆUS (*Syst. Nat.*, ed. X., I, 1758, p. 150) described the Ringed Plover as *Charadrius hiaticula* " Habitat in Europa & America ad ripas ".

Seebohm (*Hist. British Birds*, III., 1885, p. 20, *id. Geograph. Distrib. Charadriidæ*, 1888, p. 126) differentiated two races, a large and a small, the large resident in the British Isles, the small from the Continent. He said that the upper-parts of the large race were paler in colour and the legs and feet stouter than in the smaller race. He called the large or British race *Charadrius hiaticula major*.

Dr. P. R. Lowe (*Ibis*, 1914, p. 395) in " A note on the Common Ringed Plover of the British Isles (*Charadrius hiaticula major*) Seebohm ", differentiated the two races, but incorrectly named them as he took it for granted that specimens from the type locality were the small race. In a subsequent paper (*Bull. B.O.C.*, XXXVI., December,1915, pp. 7-9) he corrected this mistake and named the small race *Ægialitis* [*Charadrius*] *hiaticula tundræ*. He could not determine with the material at hand (this including skins from Sweden) whether the typical race breeding in Sweden was different from the English race, but mentioned the fact that Dr. Hartert did not think there were sufficient distinctions to separate the two races.

Schiøler (*Dansk. Ornith. Foren. Tidss.*, March, 1915, II. and III., pp. 161-181—Translated by C. B. Ticehurst, *British Birds*, IX., 1915, pp. 79-80), in a paper entitled " Races of the Ringed Plover ", proposed four races as follows :—

1. The typical *Ægialitis* [*Charadrius*] *h. hiaticula*, Linnæus, with an average wing length 131 mm. for males and 132 mm. for females ; colour of upper-parts brown-grey ; orbital margin strongly marked, whereby the shape of the head is arched and roundish.

It breeds in mid and south Sweden, Denmark, south coast of Norway and north coast of Germany.

2. The north-eastern *Ægialitis h. intermedia* (Ménétries) [= *Charadrius hiaticula tundræ*, P. R. Lowe, correct nomenclature], with an average wing measurement of about 124-125 mm. ; colour of the upper-parts as in the typical form, but the whole bird is small, its bill and legs are weaker, and as the orbital margin is not so well marked the head seems less arched.

It breeds in north Sweden, Kola, north Russia and the Arctic Coast of Siberia, east to the Tschuki Peninsula.

3. The English *Ægialitis h. major* (Seebohm), which in size is quite like the typical form and resembles it in the shape of the head. It differs in the pale grey not brown-grey colour on the upper-parts.

It breeds in the British Isles and possibly on the coast of Holland, Belgium and west France.

4. The Icelandic (to which should probably be joined the Greenlandic) *Ægialitis h. septentrionalis* (Brehm). It stands in size between the typical and the north-easterly forms; it resembles these forms in the appearance of the colour of the back; the shape of the head is doubtful and the race requires more minute examination.

After a complete study of all the material in the British Museum, together with some of my own, the conclusions one has come to are as follows :—

Charadrius hiaticula tundræ, P. R. Lowe, is a good race or sub-species and occurs in the British Isles.

Description.—Size distinctly smaller than the typical *C. h. hiaticula*, wing shorter, bill and legs more slender and, as Schiøler says, orbital margin not so well marked, making the head less arched. More delicately formed all through. Colour of upper-parts darker than in *C. h. hiaticula* specimens from Sweden and England.

Measurements.—♂ Wing 125-129; tail 50-59; tarsus 24-26; bill from feathers 14-15 mm. (Twelve breeding birds measured, six from Siberia, three from Spitsbergen and three from the extreme north of Norway).

♀ Wing 120-128; tail 50-55; tarsus 24-26; bill from feathers 13-15. (Four breeding birds measured, three from Siberia and one from north Norway.)

Distribution.—Extreme north of Norway, Spitsbergen, north Sweden, Kola, north Russia and north coast of Siberia.

The following table gives a few of the definite occurrences of *Charadrius h. tundræ* in the British Isles and is sufficient for the inclusion of that species in the British List :—

Locality and Reg. No.	*Date.*	*Sex.*	*Age.*	*Wing.*	*Tail*	*Bill from feathers.*	*Tarsus*
*1. Pagham Harb. (1874.10.12. 46)	3.ix.1874	♀	Adult.	128	54	14	25mm
*2. Whitstable, Kent. (1914.9.30. 427)	28.ix.1900	♀	Juvenile moulting back & upper breast.	126	57	15	24mm
*3. Pagham Harb. (1914.9.30. 433)	3.ix.1898	♂	Adult.	125	54	14	25mm
*4. Whitstable, Kent. (1914.9.30. 423)	20.ix.1900	♀	Young.	119	52	15	23mm
5. Rye Harbour, Sussex. (C. B. Ticehurst 1448)	20.x.1915	♂	Juvenile.	124	52	14	24mm

*British Museum (Natural History).

Locality and Reg. No.	*Date.*	*Sex.*	*Age.*	*Wing.*	*Tail*	*Bill from feathers.*	*Tarsus*
6. Rye Harbour, Sussex. (C. B. Ticehurst, 1449)	20.x.1915	♂	Juvenile.	123	47	13	24mm
7. Langley Sewage Farm, Bucks. (G. Carmichael Low, No. 1)	2.viii.1926	♂	Juvenile.	123	52	16	25mm
8. Blakeney, Norfolk. (Col. W. A. Payn)	20.ix.1932	♂	Adult.	125	55	14	25mm

There is not sufficient evidence at present to separate the typical or Swedish race, *Charadrius h. hiaticula*, Linnæus, from the so-called British race, *Charadrius h. major*, Seebohm, therefore the latter name becomes a synonym of the former. The only point of distinction would seem to be in the colour of the back in breeding birds, e.g., brown-grey for Scandinavian birds, pale grey for British ; but, as the late Mrs. Meinertzhagen has pointed out, British birds are darker in colour in winter and so the distinction is lost. The measurements are the same (*vide* also *Bull. B.O.C.*, LIV., 1934, pp. 126-127).

The Icelandic and Greenlandic race is doubtful and in my opinion cannot stand.

RECOVERY OF MARKED BIRDS.

(Concluded from page 48.)

Kingfisher (*Alcedo a. ispida*).

No.	*Ringed.*	*Recovered.*
	RINGED AS NESTLINGS.	
L.8578	Pollokshaws (Renfrew.), 10.7.32, for J. Bartholomew.	Near Paisley (Renfrew.), 18.5.34, by R. L. Brown.
N.W.425	Crookston (Renfrew.), 27.5.33, for J. Bartholomew.	Crossford (Lanark.), 13.4.34, by T. F. Kerr.
N.W.476	Cathcart (Renfrew.), 30.6.33, for J. Bartholomew.	Eaglesham (Renfrew.), —.12.33, by D. Boyd.

Little Owl (*Athene n. vidalii*).

	RINGED AS NESTLING.	
27574	Swanmore (Hants.), 26.5.29, by M. Portal.	Near Bishop's Waltham (Hants.), 4.3.34, by S. Wild.
	RINGED AS FULL-GROWN.	
RS.2042	Hulme End (Staffs.), 11.5.33, for A. W. Boyd.	Where ringed, 9.5.34, by J. Armitage.
RR.4528	Great Budworth (Ches.), 2.6.31, by A. W. Boyd.	Where ringed, 31.5.33, by ringer.
RS.2637	Baddesley (Hants.), 16.5.30, by B. Campbell.	Where ringed, 26.4.34, by J. Sibley.

Barn-Owl (*Tyto a. alba*).

	RINGED AS NESTLING.	
AG.444	Northwich (Ches.), 28.6.33, by A. W. Boyd.	Lytham (Lancs.), 14.2.34, by N. Whewell.
	RINGED AS FULL-GROWN.	
AA.4282	Comlongan (Dumfries.), 24.9.33, by Lord Scone.	Caerlaverock (Dumfries.), 27.1.34, by J. Drysdale.

Merlin (*Falco c. æsalon*).

	RINGED AS NESTLINGS.	
79598	Elsdon (Northumb.), 20.6.31, by Mrs. Hodgkin.	Powburn (Northumb.), —.5.34, by A. Sisterson.
79710	Cumberland, 19.6.26, by R. H. Brown.	Lydiate (Lancs.), 23.3.34, by J. Ashcroft.

Kestrel (*Falco t. tinnunculus*).

	RINGED AS NESTLINGS.	
RS.1745	Scone Estate (Perth.), 27.5.33, Lord Scone.	Where ringed, 29.1.34, by J. Ritchie.
77034	Kirkconnel (Dumfries.), 30.6.25, by T. K. Craven.	Leadhills (Lanark.), —.10.33, by Prof. Ritchie.
RT.5768	Near Shipley (Yorks.), 25.5.33, by C. W. Smith.	Near Sheffield (Yorks.), 28.2.34, by J. Broomhead.
RT.1051	Near Cambridge, 15.6.33, by W. R. Harrisson.	Market Harborough (Leics.), 20.12.33, by T. Mighall.
RT.7804	Houghton (Hunts.), 11.6.33, by C. S. Clarke.	Near where ringed, 7.1.34, by ringer.

Heron (*Ardea c. cinerea*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
109673	Loch Shieldaig (Ross.), 13.7.33, for Midlothian O.C.	Loch Sunart (Argyll.), 24.5.34, by W. Wilson.
105028	Almondbank (Perths.), 19.5.33, by Lord Scone.	Latheron (Caithness.), —.1.34, by J. Ross.
105029	Ditto 19.5.33	Rothesay (Bute), 9.5.34, by J. Cameron.
107006	Uldale (Cumb.), 31.5.30, by R. H. Brown.	Where ringed, 10.5.34, by ringer.
109286	Henley-on-Thames (Bucks.), —.5.33, for Lt.-Col. Pollitt.	Where ringed, 20.12.33, by D. Gordon.
109291	Ditto —.5.33	South Petherton (Som.), —.11.33, by P. Cooper.
109295	Ditto —.5.33	Otmoor (Oxon.), —.12.33, by W. B. Alexander.
109296	Ditto —.5.33	Radley (Berks.), 4.2.34, by G. B. Robinson.
104164	Faringdon (Berks.), 12.5.29, for Oxford Orn. Soc.	Near Llandilo (Carms.), 7.5.34, by F. Thomas.
112003	Mepal (Cambs.), 5.5.33, by C. S. Clarke.	Dulverton (Som.), 29.12.33, by A. Mayo.
113216	Rochester (Kent), 19.5.34, by P. Hollom.	Lille (Nord), France, —.7.34, by P. Boone.
113275	Ditto 19.5.34	St. Gérard (Namur), Belgium, 12.7.34, by H. Ledoux.
112731	Beckley (Sussex), 5.5.34, by P. Hollom.	Lille (Nord) France, —.7.34, by P. Boone.
112756	Ditto 6.5.34	Ditto —.7.34.

Mallard (*Anas p. platyrhyncha*).

RINGED AS FULL-GROWN.

AG.292	Leswalt (Wigtown), 7.3.32, by M. Portal.	Where ringed, 11.12.33, by J. Law.
AA5057	Hickling (Norfolk), 25.2.33, by J. Vincent.	Audruicq (Pas-de-Calais), France, 20.11.33, by *Chasseur Francais*).

Teal (*Anas c. crecca*).

RINGED AS YOUNG.

RT.5995	Blair Atholl (Perths.), 4.7.33, for Oxford Orn. Soc.	Armagh, Ireland, 27.1.34, by R. L. Davis.
RR.4839	Almondbank (Perths.), 27.6.33, by Lord Scone.	Dorchester (Dorset.), 10.1.34, by H. Fetherstonhaugh-Frampton.

RINGED AS FULL-GROWN.

RS.4604	Leswalt (Wigtown), 14.3.32, by M. Portal.	Where ringed, 28.9.33, by J. Law.
73147	Netherby Estate (Cumb.), 1.3.33, for the late Sir R. Graham.	Where ringed, 8.2.34, by A. Bell.
73148	Ditto 1.3.33	Where ringed, 8.1.34, by T. H. Gibson.

Teal (*continued*).

RINGED AS FULL-GROWN (*continued*).

No.	*Ringed.*	*Recovered.*
73099	Netherby Estate (Cumb.), 1.3.33, for the late Sir R. Graham.	Borgue (Kircudbr.), 28.12.33, by T. Clark.
73134	Ditto 1.3.33	Athlone (Westmeath.), 18.2.34, by W. Walsh.
Netherby 105	Ditto 20.2.32	Solia (Santander), Spain, 23.12.33, by R. Shallcrass.

Pintail (*Anas a. acuta*).

RS.1785	Loch Leven (Kinross.), 10.6.33, juv., by Lord Scone.	Falcarragh (Donegal) —.1.34, by J. Doohan.

Tufted Duck (*Nyroca fuligula*).

AA.8307	Molesey (Surrey), 8.10.33, ad., by P. Hollom.	Eynsham (Oxon.), —.1.34, by W. B. Alexander.

Cormorant (*Phalacrocorax c. carbo*).

RINGED AS NESTLINGS.

112149	Skomer (Pembs.), 29.6.33, by R. M. Lockley.	Tremont (Lot-et-Garonne), France, 1.1.34, by *Chasseur Francais*.
112356	Ditto 29.6.33	Dunraven Bay (Glam.), 22.5.34, by A. Sims.

Shag (*Phalacrocorax a. aristotelis*).

RINGED AS NESTLINGS.

104464	Coppay I., Sound of Harris, 2.7.29, by E. C. Sharp.	Near where ringed, 2.3.33, by W. MacKay.
108969	Handa (Suth.), 27.6.33, by E. C. Sharp.	Barra (Outer Heb.), —.1.34, by Miss Fraser.
108997	Ditto 29.6.33	Arisaig (W. Inverness.), 9.12.33, by D. McDonald.
109679	I. of Canna (W. Inverness.), 19.6.33, for Midlothian O.C.	Barra (Outer Heb.), —.2.34, by J. L. Campbell.

Gannet (*Sula bassana*).

RINGED AS FULL-GROWN.

112489	Grassholm (Pembs.), 2.7.33, by R. M. Lockley.	30 m. off Mine Head (Waterford), 4.4.34, by Skipper Jennings.
112504	Ditto 21.7.33	30 m. off Plymouth (Devon.), 17.3.34, by A. Granger.

Wood-Pigeon (*Columba p. palumbus*).

RINGED AS NESTLINGS.

RS.1591	Almondbank (Perths.), 30.4.33, by Lord Scone.	Errol (Perths.), 24.2.34, by J. Logie.
RS.5959	Glenorchard (Stirling.), 18.6.32, by J. Bartholomew.	Where ringed, 16.3.34, by ringer.
RT.7487	Penrith (Cumb.), —.7.33, by H. J. Moon.	Stamfordham (Northumb.), 10.2.34, by G. Johnson.
RT.5283	Kirkham (Yorks.), 31.5.33, for Bootham Sch.	Staxton (Yorks.), 9.3.34, by W. Robertson.

Stock-Dove (*Columba œnas*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
RT.5923	Shipley (Yorks.), 2.9.33, by C. W. Smith.	Drighlington (Yorks.), 25.4.34, by A. Bentham.
RS.1960	Evesham (Worcs.), 27.6.33, by A. J. Harthan.	Capbreton (Landes), France, 7.11.33, by *Chasseur Francais.*

RINGED AS FULL-GROWN.

AA.1235	Great Salkeld (Cumb.), 3.5.33, by H. J. Moon.	Where ringed, 6.5.34, by W. Howe. (In Tawny Owl's nest.)
RT.5765	Shipley (Yorks.), 30.7.33, by C. W. Smith.	Where ringed, 17.3.34, by ringer.

Turtle-Dove (*Streptopelia t. turtur*).

RR.4481	Great Budworth (Ches.), 25.7.29, ad., by A. W. Boyd.	Where ringed, 14.7.33, by ringer.

Oyster-Catcher (*Hæmatopus o. occidentalis*).

AH.917	Walney I. (Lancs.), 21.6.31, young by H. W. Robinson.	Askham-in-Furness (Lancs.), 10.4.34, by H. Brown.

Ringed Plover (*Charadrius h. hiaticula*).

AN.8979	Blakeney (Norfolk), 23.6.32, by H. Gillman.	Where ringed, 23.2.34, by L. Coddington.

Lapwing (*Vanellus vanellus*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

AP.6233	Logiealmond (Perths.), 26.5.33, by Lord Scone.	Pte. de Grave (Gironde), France, 1.3.34, by *Chasseur Francais.*
AP.4410	Cambusmichael (Perths.), 2.7.33, for Perth N.H.S.	Filey (Yorks.), —.4.34, by J. Pooley.
S.8367	Isle of Iona, 19.6.31, by Miss Bickersteth.	Near Ennis (Clare), 23.12.33, by P. Moroney.
T.1039	Glenorchard (Stirling.), 12.6.28, for J. Bartholomew.	Charleville (Cork), 3.2.34, by J. Cronin.
T.6389	Kirkconnel (Dumfries.), 22.5.29, by T. K. Craven and W. Bone.	Near Tullamore (King's Co.), 15.1.34, by J. Dooley.
P.5327	Penrith (Cumb.), —.5.31, by H. J. Moon.	Athy (Kildare), 30.1.34, by P. Day.
R.8254	Ditto —.6.30	Cahir (Tipperary), 20.1.34, by H. Ford.
AP.8506	Ditto —.5.33	Montejaque (Malaga), Spain, 7.1.34, per Foreign Office.
RR.5826	Langwathby (Cumb.), 16.5.28, by H. J. Moon.	Chorley (Lancs.), —.12.33, by C. Stobart.
AP.7392	Ullswater (Cumb.), —.5.33, by H. J. Moon.	Puerto Real (Cadiz), Spain, 4.2.34, by M. F. Mara.

Lapwing (*continued*).

RINGED AS NESTLINGS (*continued*).

No.	*Ringed.*	*Recovered.*
AP.3350	Tebay (Westmor.), —.6.32, by H. J. Moon.	Near Largs (Ayr.) 23.4.34, by J. Tumath.
AP.5062	Kirkby Lonsdale (Westmor.), —.5.33, by H. J. Moon.	Arcos de la Frontera (Cadiz), Spain, —.2.34, by W. H. Riddell.
AR434	Mytton (Lancs.), 23.7.33, by C. Oakes and E. Battersby.	Padiham (Lancs.), 25.3.34, by H. Walmsley.
AR394	Near Whalley (Lancs.), 3.7.33, by C. Oakes and E. Battersby.	Ribadesella (Asturias), Spain, —.12.33, by A. Pidal.
R9895	Mobberley (Ches.), 4.6.31, by A. G. Haworth.	Pujols-sur-Ciron (Gironde), France, 19.12.33, by *Chasseur Francais.*
AP.5426	Handforth (Ches.), 26.5.33, by E. Cohen.	Concepcion (Huelva), Spain, 1.1.34, by H. Maidment.
U.4572	Prestbury (Ches.), 16.6.28, by R. M. Garnett.	Carrington (Lancs.), 22.4.34, by J. Moore.
AN.2140	Hungerford (Berks.), 23.5.31, by G. Brown.	Nantes (Loire Inf.), France, 25.2.34, by *Chasseur Francais.*
RR.6625	Canterbury (Kent), 18.5.30, for St. Edmund's Sch.	Biarritz (Basses Pyrénées), France, 15.12.33, by *Chasseur Francais.*
T.6599	Rye (Sussex), 20.5.29, by H. Barlow.	Navacerrada (Madrid), Spain, 12.2.34, by Sec. British Embassy.
S.2550	Steart I. (Som.), 2.6.29, by E. G. Holt.	Near Dax (Landes), France, 8.3.34, by Dr. Lassalle.

(*b*) RECOVERED WHERE RINGED.

W.7977	Tiree (Inner Heb.), 7.5.27, for Lt.-Col. Pollitt.	31.12.33.
AN.213	Glenorchard (Stirling.), 8.6.31, for J. Bartholomew.	6.2.34.
AN.1067	Rockcliffe (Cumb.), 25.6.32, by E. Blezard.	1.4.34.
AP.5048	Penrith (Cumb.), 4.5.33, by H. J. Moon.	12.1.34.
AP.3405	Clapham (Yorks.), —.6.32, by H. J. Moon.	7.4.34.

Curlew (*Numenius a. arquata*).

RINGED AS NESTLINGS.

RT.7349	Penrith (Cumb.), —.6.33, by H. J. Moon.	Where ringed, 24.1.34, by W. Howe.
29643	Ditto —.6.31	Holy I., Anglesey, —.1.34, by G. Dean.

Woodcock (*Scolopax r. rusticola*).

RINGED AS NESTLINGS.

AP.384	Alnwick (Northumb.), 12.5.32, by the Duke of Northumberland.	Wooler (Northumb.), 4.1.34, by T. Trevelyan.
W.5997	Holker (Lancs.), 1.5.30, for Col. Porritt.	Near where ringed, 5.1.34, by ringer.
W.8809	Abbeystead (Lancs.), 1927, by H. W. Robinson.	Where ringed, 29.12.33, by ringer.

Sandwich Tern (*Sterna s. sandvicensis*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
S.7348	Scolt Head (Norfolk), 7.7.30, by R. M. Garnett.	Cabourg (Calvados), France, —.4.34, by *Chasseur Francais.*
P.6249	Salthouse (Norfolk), 27.6.31, by R. M. Garnett.	Joal, Senegal, W. Africa, 19.4.34, by Père Ezanno.
AP.4301	Ditto 22.6.32	Ditto 19.4.34.
AP.3191	Ditto 30.6.32, by H. Gillman.	Keta, Gold Coast, W. Africa, 21.4.34, by C. Amegayibor.
AR.1007	Ditto 6.6.33, by E. Cohen.	Ditto 9.5.34, by Sec., Colonial Office.
AR.2434	Ditto 8.6.33,	Lobito, Portuguese W. Africa, Winter 1933-34, by L. Davis.

Common Gull (*Larus c. canus*).

RT.5981	Near Inverness, 24.6.33, young, for Oxford Orn. Soc.	Duntulm, I. of Skye, 24.4.34, by J. Wilds.

Lesser Black-backed Gull (*Larus f. graellsii*).

RINGED AS NESTLINGS.

AA.5319	Walney I. (Lancs.), 21.6.33, by H. W. Robinson.	L'Aiguillon-s.-Mer (Vendée), France, 5.11.33, by Comte de Germond.
AA.1885	Ditto 14.6.33	Lisbon, Portugal, 18.5.34, by C. Diniz.

Great Black-backed Gull (*Larus marinus*).

112154	Skokholm (Pembs.), 27.6.33, young, by R. M. Lockley.	Near Launceston (Cornwall), 1.2.34, by S. Hill.

Kittiwake (*Rissa t. tridactyla*).

RT.2060	Farne Is. (Northumb.), 27.6.32, young, for Mrs. Hodgkin.	Off Dogger Bank, North Sea, 15.12.33, by *Chasseur Francais.*

Razorbill (*Alca torda*).

AM.911	Handa (Suth.), 29.6.32, ad., by E. C. Sharp.	Near Middelfart (Fyen), Denmark, 1.1.34, by C. Andersen.

Moor-Hen (*Gallinula c. chloropus*).

RT.3599	Wittersham (Kent), 28.3.33, ad., by R. G. Williams.	Stone (Kent), 15.1.34, by R. Bull.

NOTES

THE VIII. INTERNATIONAL ORNITHOLOGICAL CONGRESS.

IE last time the International Ornithological Congress met England was in 1905 under the Presidency of Dr. R. owdler Sharpe, in London. Now after the lapse of nearly irty years it has returned to England again, but on this casion it was decided to hold it at Oxford, and Rhodes ouse was placed at the disposition of the Congress by the ustees. The choice of site proved to be a happy one, and voured with glorious weather and a large attendance, the ngress was a great success. The President was Dr. E. resemann ; Graf Murany, Rear-Admiral Lynes and Prof. r. E. Lönnberg were elected Vice-Presidents ; the Rev. F. C. Jourdain was General Secretary, and Mr. B. W. Tucker acted Treasurer and Secretary of the Local Reception Committee ; r. P. R. Lowe and Dr. H. Balfour were Chairmen of the nglish and Oxford Executive Committees.

A new feature (though already well established at A.O.U. eetings in America) was the Art Exhibition of the works living British artists, under the charge of Mr. B. B. maston. This was supplemented by a fine exhibit of otographs arranged by Messrs. W. H. B. Somerset and W. Tucker. Both were much admired and are likely become permanent features of future Congresses.

Official Receptions were given by the Mayor of Oxford the Town Hall and by the Vice-Chancellor at the Ash- lean Museum on July 2nd; while the R.S.P.B. also held Reception in the Hall of Exeter College on the evening of y 4th. The Congress Dinner, at which all the foreign itors were entertained, was held in the Hall of Christ urch on July 5th.

he short excursions included visits to Lilford Hall and warren Park on July 3rd, and Whipsnade on July 5th, the nbers being most hospitably entertained on these occasions Lord Lilford, Mr. A. Ezra, and the Zoological Society of ndon.

ot only were nearly all the European countries represented the Congress but delegates also attended from Japan, China, India, Egypt, and S. Africa, and the United States and Canada were also represented by some 13 or 14 delegates and members.

Space does not permit us to give details of the numerous papers which were read, but it is hoped to publish these later in the transactions. Films of bird life were shown by Messrs. O. G. Pike, H. A. Gilbert and Prof. J. S. Huxley, while Herr Siewert's slides of the Osprey were much admired.

The Congress closed on Friday evening amidst great enthusiasm and it was announced that the next meeting would take place in France in 1938. Prof. A. Ghigi was elected President and M. J. Delacour Secretary.

The long excursion, which was organized by Mr. H. F. Witherby with the assistance of Mr. R. M. Lockley and Commander A. T. Wilson, R.N., took place from July 7th to 9th. One hundred and forty-five members took part and proceeded from Oxford to Tenby by road on Saturday the 7th. On Sunday morning they embarked at Pembroke Dock in H.M. Destroyers "Windsor" (Commander T. Troubridge, R.N.) and " Wolfhound " (Lieut.-Comm. Adams R.N.), kindly put at the disposal of the Congress by the Admiralty, and proceeded to Skokholm, where they were received by Mr. and Mrs. Lockley and shown the numerous and interesting birds breeding on that island. Re-embarking after lunch the party was conveyed to Skomer and landed there by kind invitation of the owner, Mr. W. F. Sturt. After visiting the large colonies of sea-birds on this island the members were once again conveyed in boats to the Destroyers, which now proceeded to Grassholm, and steaming slowly and close in twice round this island, gave the company an impressive view of the magnificent colony of Gannets. Finally, on the way back to Pembroke Dock, large flocks of Manx Shearwaters were encountered in Broad Sound. The excursion was favoured by glorious weather and a calm sea and the arrangements made by the officers and men of the Destroyers for the comfort of the members and for rapid landing and re-embarking were perfect. On Monday a return to Oxford was made by road, the party being kindly entertained to tea at Stanway by the Earl and Countess of Wemyss and the Hon. Guy Charteris.

We may add that on July 1st Col. Meinertzhagen received members of the Congress at his home in London, and on July 10th the Trustees of the British Museum arranged an exhibition of skins and books in the Whale Room, and entertained the Congress members to tea.

THE BRITISH TRUST FOR ORNITHOLOGY.

THE British Trust for Ornithology, which has been formed in order to provide a clearing-house and directing centre for the use of field ornithologists in this country, held its first annual general meeting at Rhodes House, Oxford, on Thursday, July 5th. Although the field work under the Trust will be permanently centred in or near Oxford, the general meetings will normally be held in London; the reason for having this one in Oxford was the presence of a large number of ornithologists there for the International Ornithological Congress.

Lord Scone, M.P. (Chairman of the Trust), took the chair, and was supported by Mr. H. F. Witherby (Vice-Chairman), Mr. B. W. Tucker (Hon. Treasurer), Mr. E. M. Nicholson (Hon. Secretary), and the Hon. G. Charteris and Prof. Julian S. Huxley (Members of Council). There was an attendance of fifty persons. Reporting on the progress so far made the Chairman outlined the stages which had led up to the scheme for a national Institute of Field Ornithology, the steps taken towards the formation of the Trust, the difficulties which had been met, and how far they had been overcome. He emphasized the additional handicaps which had been imposed by the national economy campaign of 1931-33, and the obstacles raised by the Board of Trade in holding up the Trust's ncorporation. He expressed the thanks of the Trust to the Vice-Chancellor and the University of Oxford for their helpfulness in recognizing the scheme, in setting up the Oxford University Committee for Ornithology to help in administering it, and for their support in other directions. He also expressed the appreciation of members for the enerosity of Mr. H. F. Witherby in presenting a capital sum of £1,400 as the nucleus of a permanent endowment for the Trust, and to Mr. H. M. Wallis for his gift of £100 with the ame object. He gave an account of the efforts which were eing made to improve the financial position of the Trust, hich was still by no means satisfactory in view of the scale f work required, and appealed to members to help in finding ew subscribers, in suggesting lines of attack and so forth. e also referred to the summary report on field work which ad already been circulated to subscribers. Mr. Tucker utlined the financial position of the Trust, and moved a solution, which was carried unanimously, that during the itial period of working the Treasurer should be empowered, necessary, to spend in any one year up to one-third of money bscribed under the appeal, excluding funds which are ear-marked for capital account. The Chairman explained that these powers were only sought for the ensuing year.

Mr. W. B. Alexander conveyed to the meeting Mr. R. M. Lockley's offer to accommodate at cost on the island of Skokholm members who might wish to visit it for ringing or observation purposes, and was asked to thank Mr. Lockley on behalf of the meeting. It was announced that members who wished to avail themselves of this offer should write to Mr. Lockley at Skokholm, Marloes, Haverfordwest, Pembrokeshire,

In response to the Chairman's invitation for suggestions. Dr. N. H. Joy suggested that the Trust should do some investigation of problems of instinct and intelligence ; Mr. H. Morrey Salmon (as President of the Zoological Photographic Club) explained the possibilities of co-operation in the formation of a collection of bird photographs ; Captain H. A. Gilbert suggested the stirring up of some of the many county associations which formerly took an interest in birds, but had now frequently turned archæological. The possibilities of recruiting fresh members and of raising funds through universities, public schools and so forth, by means of lectures or otherwise, were discussed on the initiative of Mr. Charteris.

After the discussion Dr. Carmichael Low moved and Dr. Landsborough Thomson seconded a resolution adopting the Chairman's report and instructing the present members of the Council to continue to act for the ensuing year or until the general meeting due to be held immediately after incorporation, whichever was the shorter period. To this was prefaced, on Mr. A. Holte Macpherson's suggestion, a provision confirming that pending incorporation the objects and regulations of the Trust should be those contained in the draft Memorandum and Articles of Association recently submitted to the Board of Trade, so far as these are applicable. Dr. Landsborough Thomson expressed on behalf of the meeting appreciation of the work which the Council had done and the combined resolution was carried without a dissentient.

The Chairman thanked members for attending in such numbers in spite of the heavy demands which the International Congress had made on them, and for the many constructive suggestions they had made, which would be carefully considered. In response to a request from Mr. Kinnear he promised that the Council would endeavour if possible to arrange for the next general meeting to be held in London on the same day as a British Ornithologists' Club dinner, in order to suit the convenience of a number of members living at a distance.

BIRDS ON LUNDY.

During a visit to Lundy I had excellent views on June 24th and 26th, 1934, of the Rose-coloured Pastor, which has already been recorded (*antea*, p. 49).

Other birds seen during my visit which have not often been recorded from Lundy (see T. H. Harrisson, *antea*, Vol. XXV., pp. 212-219, and C. Oldham, p. 275) were a Turtle-Dove (*Streptopelia turtur*) in Marisco, on June 24th, and three adult Black-headed Gulls (*Larus ridibundus*) which flew over the island on June 28th. A party of six Curlew (*Numenius arquata*) was seen each day from June 24th to 30th, but were not breeding. We saw only about five pairs of Stonechat (*Saxicola t. hibernans*), which is a big decrease on the numbers recorded nesting in recent years. David Lack.

NEST MORTALITY.

The following notes on nest mortality were obtained near Ulceby, in north Lincolnshire, during April, 1934. The weather was fairly favourable for early nesting, there being little rainfall and no extremes of temperature. A little more than 40 per cent. of the eggs laid were successfully fledged.

Species	Nests watched	Eggs	*Destroyed.* Human agency	Natural causes	Hatched	*Destroyed.* Human agency	Natural causes	Fledged
Blackbird ... (*T. m. merula*).	24	91	39	11	41	0	9	32
Song-Thrush ... (*T. ph. clarkei*).	16	62	13	10	39	2	8	29
Mistle-Thrush... (*T. v. viscivorus*).	5	17	0	0	17	0	4	13
Hedge-Sparrow (*P. m. occidentalis*).	4	14	0	4	10	2	0	8
Robin ... ... (*E. r. melophilus*).	4	18	4	0	14	0	4	10
Chaffinch ... (*F. c. cælebs*).	4	13	4	0	9	0	3	6
Wren ... ... (*T. t. troglodytes*).	2	12	5	0	7	0	0	7
Magpie ... (*P. p. pica*).	3	17	12	0	5	0	0	5
Wood-Pigeon ... (*C. p. palumbus*).	4	8	0	0	8	0	2	6
awny Owl ... (*S. a. sylvatica*).	3	8	0	2	6	2	0	4
ong-eared Owl (*A. o. otus*).	2	5	0	1	4	0	0	4
oorhen ... (*. c. chloropus*).	3	22	0	2	20	Not ascertained.		
Species ...	74	287	77	30	180	6	30	124

S. Baron.

THE CLUTCH OF THE GOLDEN ORIOLE.

No mention is made in the *Practical Handbook* of the apparent fact that clutches of three eggs and no more, are by no means uncommon in the case of the Golden Oriole (*Oriolus o. oriolus*).

In a considerable experience of this species in Spain, France, Hungary and Roumania, I have frequently found full complements of three eggs. While clutches of four eggs are the more common, I have yet to see one of more than that number.

In Transylvania, in 1934, Captain H. H. V. Christie and I had under observation eight nests, three of which contained three eggs only, and the remainder four. I am inclined to think that approximately 40 per cent. of Orioles' nests have full complements of no more than three eggs. W. M. CONGREVE.

[When the paragraph in the *Practical Handbook* was published in 1919, it seemed possible that the records of clutches of three eggs referred to incomplete sets, but further experience has shown that the three clutch occurs commonly in France, Holland, Germany, Finland, Hungary, Roumania and Spain, from all of which countries I have records. Five eggs are scarce, but I have seen a freshly taken set of five from Holland and this number also occurs at times in Germany and elsewhere. Six have apparently only once been recorded (see *Zeitschr. f. Ool.*, Oct., 1906, p. 104).—F.C.R.J.]

APPARENT POLYGAMY OF THE WILLOW-WARBLER.

IN May, 1934, the territories of two cock Willow-Warblers (*Phylloscopus t. trochilus*) at Sutton, in Surrey, were mapped and one of them was selected for more careful observation, though the second was frequently visited for short periods, Young flew from the nest in the first territory on June 17th. Search was then made for the nest in the second territory. and it was found that there were two nests twelve yards apart. One nest contained well-feathered young which flew on June 18th or 19th. The second held at least four young which were fledged on June 27th or the morning of the 28th.

Only one bird was in attendance at each nest on June 17th, when they were under observation for four hours. No song was heard so that presumably both these birds were hens. They seemed to be on friendly terms—foraging for food in the same places, continually passing close to each other's nests without arousing resentment, and, most interesting of all, exchanging their plaintive "alarm" notes in the manner usual with paired birds, each hen being perched above her own nest during these duets. The second nest was watched on June 19th, 23rd (for four hours), 24th, 26th, and on all occasions only one bird fed the young. P. H. TRAHAIR HARTLEY.

STRANGE NEST-BUILDING BY WOUNDED BLACKBIRD.

A PAIR of Blackbirds (*Turdus m. merula*) had built for several successive years in an evergreen honeysuckle. This year (1934) the same site was chosen and the eggs were laid in the beginning of April. When the young were about ten days old, however, they were found one morning on the lawn elow, having been pecked to death, while the hen bird, vidently in defending her offspring, suffered a broken or islocated wing, which prevented her from flying any more.

After a few days, during which time the pair of birds were en hopping about the lawn in the vicinity of the old nest, e female was discovered sitting on the disused nest of a ng-Thrush. This nest had been built in a laurel bush d forsaken later. It was about six feet from the ground and the bird could reach it easily by hopping up the branches of the bush. It was in a rather bad state of repair, having a tear on one side and tilting over slightly on another. On several occasions the bird was seen to be occupying this nest, although she laid no eggs in it. A few days later she began to follow a strange procedure. She was first observed to be collecting bundles of dead grass and moss and carrying them into the laurel bush. The material was being deposited in a fork of the bush about a foot and a half below the nest on the side over which the nest was slightly tilting. The significance of this work was not clear at this stage, but meanwhile the bird continued with increasing energy, working feverishly from morning to evening and piling up mass upon mass of hay and moss. The male bird took no part in the proceedings and seemed entirely unaware of what the female was doing. Here was no normal nest-making but something in which he was apparently unable to co-operate. He was never seen to make the slightest contribution to the growing pile in the bush. He did, however, assist in a different way, by taking up a point of vantage from time to time and warning his disabled mate if anything in the nature of danger appeared, when she would bound off into cover.

The object of the pile was soon to be seen. It was evidently intended as a prop to hold up the sagging part of the nest. Day after day for about a week, the hen bird added to this extraordinary though rather clumsy structure, until she at last had built it up to the base of the nest. Then, and not until then, did she pay any attention to the repair of the nest itself. She quickly mended the tear and strengthened the rim of the nest. Finally she relined it with dried grass and laid four eggs.

The reason for the bird making use of an old nest instead of building a new one had evidently some connexion with her damaged wing, although it is difficult to see what advantage was gained, considering that it involved her in far more labour to repair the old nest. The material that was used was certainly as much, if not more than would be required for building a new nest.

Actually, the prop, as such, although correct in principle, was not an efficient structure, for the dried grass was rather too loosely packed for it to be capable of acting as a strong support if it had been needed.

Unfortunately, the Blackbird's efforts were in vain, as the eggs were again stolen, probably by the previous offender, about the time that they were due to hatch.

The hen then gave up nest-building and devoted herself to foraging, a laborious task in this lean and unfruitful summer.

PHYLLIS GARDINER.

LARGE BROOD OF ALPINE RING-OUZELS.

ON May 4th, 1934, at about 4,000 feet above sea-level, on the slopes of Mount Retyezát, Transylvania, Captain H. H. V. Christie and I discovered and carefully identified the nest of an Alpine Ring-Ouzel (*Turdus torquatus alpestris*), situate some four feet from the ground in a young conifer tree, containing no less than six young some two or three days old. There appears to be no recorded occurrence of such a large brood. The season was an abnormally hot, dry and forward one, and snow, normally present at this date, was conspicuous by its absence. W. M. CONGREVE.

POSSIBLE BLACK-EARED WHEATEAR SEEN IN PEMBROKESHIRE.

IN an isolated place about a mile and a half from St. David's Head, Pembrokeshire, on June 26th, 1934, I came upon two Wheatears. Only fleeting glimpses were obtained of one bird, but close and clear views were had of the other, and the following are my notes taken at the time.

My first impression was a white bird with a jet-black eye splash and black wings. Closer views showed a white tail with a little black or brown at the edges; head and back slightly buffish; legs and bill dark. Owing to the white tail the white rump was not conspicuous in flight as in our typical Wheatear (*Œnanthe œnanthe*). Both birds were silent. A little previously I had seen a party of eight Wheatears, all of the typical form.

I have since examined specimens of the Black-eared Wheatear (*Œnanthe hispanica*) at the British Museum, and apart from being a little more sandy coloured on the head and back, and showing more black in the tail, they agreed very well with the bird I saw.

The possibility of the bird being a pied specimen of *Œnanthe œnanthe* cannot, of course, be overlooked, but in that case one would not expect the sandy-buff on the head and back.

E. MANN.

A CENSUS OF NIGHTINGALES IN N.W. SURREY.

I READ with interest of Mr. A. J. Harthan's census (*antea* pp. 50-52) of singing Nightingales (*Luscinia m. megarhyncha*), in Worcestershire as I did a similar survey in north-west Surrey in May, 1933. The area counted, chosen not for any special abundance of Nightingales but because I live in it, was the six square miles covered by the six-inch Ordnance Survey Map, Surrey, sheet XI., S.W. The eastern portion of this area, which includes part of Addlestone, is rather built over, but the rest is chiefly small woods, rough copses, pasture and parkland, with some nursery gardens and very little arable land. There are practically no thickets of thorn or gorse. In these 3,840 acres were 26 singing Nightingales, or one per 148 acres, roughly double the density found in south Worcestershire. They showed no marked preference for water, but, like Mr. Harthan, I found it was of no use to begin to count before 11 p.m., and that there was a considerable falling off of song after 2 a.m. The birds were located between May the 9th and 23rd, and although each bird was not specifically checked, the majority were heard many times. P. A. D. Hollom.

A CENSUS OF NIGHTINGALES IN GLOUCESTERSHIRE.

Referring to Mr. A. J. Harthan's report in the last number (*antea*, pp. 50-52) on Census of Nightingales (*Luscinia m. megarhyncha*), I may say that I have been collecting similar material over the last three years. My survey covers an area of about 2,000 acres on the west side of the Severn Valley in Gloucestershire and lies in a roughly oblong patch from a point four miles due west of Gloucester to the foot of May Hill, a well-known outlier of the Forest of Dean. The geological formation also is Keuper marl. The greater part of the land is agricultural and nine-tenths is pasture. There are two streams traversing the west side with winding meadows and some scattered copses of oak, ash, willow and birch. In the east end of this area there is a block of about 200 acres of oak and hazel coppice which is interspersed with cider orchards.

I have observed and noted the male Nightingale song territories for the seasons 1932, 1933 and 1934. I have also located pairs and nests and noted the broods reared during this period. I find that the nesting sites remain extraordinarily constant for the three years. The same site was inhabited by one pair (I can't say it was the same pair, of course, but I hope to catch and ring them another year) for all three seasons, and the nest was in each year within 20 yards of the sites in the other two years.

The song territories were all in two types of vegetation association: (1) On the edge of full shade oak and hazel coppice woods and the nests were in half shade on the edge of these woods, where bramble and dog-rose is able to form a ground cover. (2) In small patches of derelict ground, of which there are few outside the woods. These are uncultivated and allowed to run wild with hawthorn, privet and sloe, and with tufts of woodland grasses and creeping bramble. I am convinced that, if woodland owners would allow half an acre on the edge of their woods here and there to go derelict in this fashion, they would assist in increasing the Nightingale population.

The census is as follows :—

1932—7 song territories,	2 nests,	2 broods reared.	
1933—6 ,, ,,	2 ,,	2 ,,	,,
1934—7 ,, ,,	3 ,,	3 ,,	,,

This works out as follows :—

1932—1 Nightingale in	285	acres.
1933—1 ,,	333	,,
1934—1 ,,	285	,,

The greater part of the Nightingales were on the woodland side of the area. The density here was :—

1932—1 Nightingale in	76	acres.
1933—1 ,,	115	,,
1934—1 ,,	57	,,

On the other hand no nests were found in either of the three years, nor were any fledged young seen in the outlying copses or patches of derelict land along the brooks. All the nests were found on the edge of the woodland area on the east side. The singing birds on the west, unwooded side, were apparently all unmated cocks.

M. PHILIPS PRICE.

SOME BREEDING-HABITS OF KINGFISHERS.

ABOUT February 20th, 1934, a pair of Kingfishers (*Alcedo a. ispida*) came to the district of Netherlee, Renfrewshire, and took possession of a sandy bank now containing nine nest-holes. They are still there (July 7th), sitting on a third clutch of seven eggs, first and second broods having flown. Incubation of the first clutch commenced about April 8th, and when the young were barely a fortnight old, the parents became very active and made three new nest-holes in the same bank. The best of these was selected and a second clutch of seven eggs was laid, and incubation began before the birds were entirely free from their first brood. When the second brood reached the same stage as the first the old birds again became very active, and cleared out the partially dried refuse and remains in the first nest, and another seven eggs were produced. This time full week was spent in incubation before the second brood left their nest-hole.

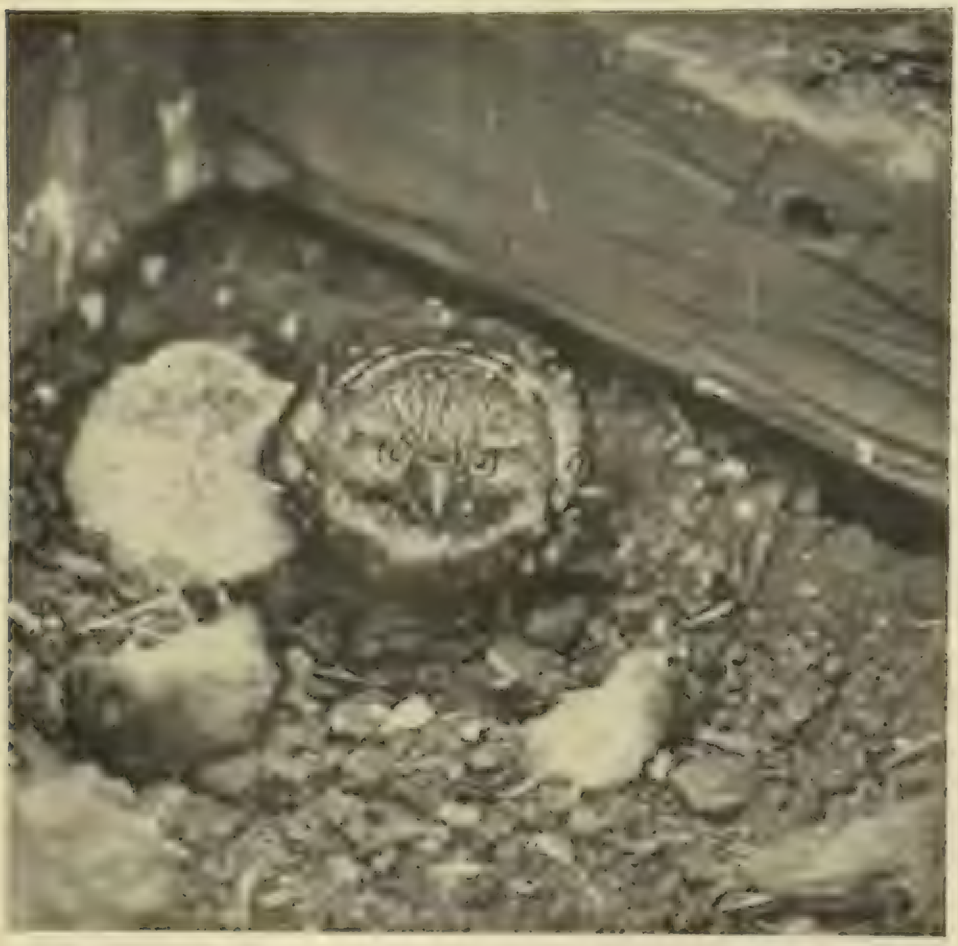
I hid up in a nearby tree one evening and saw the hen leave he nest-hole containing the third clutch of eggs, probably after nearly a day's incubation, and she returned very quickly, and simultaneously with her mate, both carrying fish. The cock alighted first on the roots at the side of the bank, turned, and faced the nest-hole containing the young, and then flew in and delivered his fish. On reappearing he splashed in the river several times to free his plumage from dirt, and again returned to the roots ; this time, facing the other nest-hole, he flew in to spend the evening on the eggs.

This is the first time I have ever seen or known any bird feeding young and brooding eggs in different nests at the one time.

The following cases of Kingfishers destroying the nests and eggs of others are, I think, worth recording. A pair of Kingfishers crushed themselves into a small stretch of territory on the Kittoch, and produced seven eggs. There were two nests containing young on either side of its position and very near to it. The nest-hole was very conspicuous, and was known to the parents of both these nests, each having in turn overhauled it before finally choosing a site. While the eggs of the interloper were almost fresh they were destroyed. The second occurrence took place in the district of Stamperland. A first brood of six young was reared successfully, but just before they flew another pair of Kingfishers took possession of a very conspicuous bank near the mouth of the Kittoch, and only about 150 yards distant. Here they excavated a nest-hole without any interference on the part of their near neighbours, and seven eggs were produced, and incubation proceeded for a fortnight, when suddenly, after an absence of twelve days, the pair that had already reared a brood returned, bent evidently on rearing a second brood. They inspected their old hole and their neighbour's as well, and cleared her out as well as her eggs, which were well on the road to hatching. The despoilers ultimately laid their second clutch in the nest-hole from which their first brood flew. ROBERT L. BROWN.

LITTLE OWL'S NEST UNDER RAILWAY.

THE nest of the Little Owl (*Athene n. vidalii*), shown in the accompanying photograph, was discovered by chance. It is situated in a small shallow pit, once used for housing mechanism, adjoining an electric-railway. Entering and leaving, the birds pass under the line on which a service of fast electric-trains operates day and night. It must also be extremely noisy when trains are passing overhead. On the other hand, of course, it is warm and dry. The pit is covered by an iron plate and, being unused by the railwaymen, nobody would, normally, ever raise the plate. One of the Owls was seen one day to pass under the rail and enter the pit. It was this that led to the discovery of her home.



The mother Owl is very tame and can be handled freely and with impunity. She never flies away when visited and when photographs were taken she immediately resumed her place. On one occasion when I visited her I found no fewer than nine dead mice in the " larder ". The dead bird which is visible in the photograph is a Greenfinch. I also found one day what appeared to be a Sparrow's wing.

H. S. VICKERS.

HOBBY IN CHESHIRE.

ON June 4th, 1934, a farmer near Alderley Edge, Cheshire, unfortunately shot a Hobby (*Falco s. subbuteo*) in mistake for a Sparrow-Hawk. He gave the bird to me and it was identified by Mr. H. Britten at the Manchester University

Museum, as well as by Mr. A. W. Boyd. A skin has been made of it and it proved to be a male in breeding condition. The records for Cheshire are few and far between.

In the plumage Mr. Britten found the louse *Degeeriella fusca* (Nitz). EDWIN COHEN.

SCARCE BIRDS IN LANCASHIRE.

THE record of a Spoonbill (*Platalea leucorodia*) from Carmarthenshire during mid-February, 1934 (*antea*, p. 56), induces me to put on record the occurrence of one, perhaps the same bird, on the Lancashire coast during the winter of 1933-4. The bird appeared on the Hesketh Bank and later, further down the coast, at Formby. I first heard of it from wildfowlers, and the bird was there when I was on the coast in November, and I was assured later that it was not shot. It is very difficult to record names and scheduled birds when records are obtained with the help of wildfowlers, and it might be added that a Spoonbill was shot on the coast north of Liverpool seven years ago, but not recorded.

A COMMON BUZZARD (*Buteo b. buteo*) visited the outskirts of Liverpool between Knotty Ash and Knowsley during the first week of April, 1934, when we watched it after Wood-Pigeons. This is the first record of the Common Buzzard I have for the bounds of Liverpool, and it was probably one of the pair that frequented the west Lancashire dunes between Southport and Formby during the past winter and early spring, a haunt that Buzzards occasionally visit for rabbits and Wood-Pigeons (the latter from the pinewoods) in winter.

ON April 14th, 1934, I watched a drake Garganey (*Anas querquedula*) on the lake at Knowsley Park. This is another addition to the records for the birds of Liverpool, though specimens have been noted at Formby in the north, and Marbury Mere, Cheshire, in the south, as well as at other localities in Lancashire.

IN February, 1934, I watched a Ruff (*Philomachus pugnax*) on the Liverpool Corporation Sewage Farm, and obtained confirmation of the record from Mr. W. Cutmore, formerly keeper of vertebrates at Liverpool Museum, who some time later informed me he had watched two on the same sewage farm at the same period of February. ERIC HARDY.

RINGED PLOVER'S DOUBLE BROOD.

I HAD again this year pretty clear evidence of the double-brooding of the Ringed Plover (*Charadrius h. hiaticula*), from the same spot as in 1930 (see Vol. XXIV., p. 109), On April 22nd I found a nest with eggs in a large, enclosed, waste field in E. Suffolk. These eggs were successfully hatched and the brood went off. A single pair continued to frequent the field (which is an easily-observed one), and on July 1st I found, about 50 yards from the first nest, another complete clutch. No more than one pair was ever seen in the field.

T. G. POWELL.

CENSUS OF BREEDING SKUAS ON NOSS.

ON June 21st, 1934, I took a census of the breeding pairs of Skuas on Noss, Shetland, and found that there were from sixty-seven to seventy pairs of the Great Skua (*Stercorarius s. skua*) and forty-eight to fifty pairs of Arctic Skuas (*S. parasiticus*). Two years ago Mr. Jamison counted fifty pairs of breeding Bonxies and estimated the Arctic Skuas a year or two before that at sixty pairs. These latter are said to fluctuate in numbers a great deal from year to year without any apparent cause. The increase of the Bonxie is welcomed by the farmers, as they say that it drives away the Ravens, Hooded Crows and Great Black-backed Gulls, that might otherwise attack " foundered " sheep. L. S. V. VENABLES.

EARLY NESTING OF CORN-BUNTING IN SKYE.—Mr. Seton Gordon informs us that a brood of Corn-Buntings (*Emberiza c. calandra*) in the north of Skye left the nest on June 19th, 1934. This is a very early date for so far north.

PIED FLYCATCHER NESTING IN PERTHSHIRE.—Mrs. H. Barbour reports that a Pied Flycatcher (*Muscicapa h. hypoleuca*) was seen and its nest found in an old Woodpecker's hole near Pitlochry, on June 3rd, 1934, by Col. Ronald Campbell.

MERLIN BREEDING ON DARTMOOR, DEVON.—Mr. W. Walmesley White informs us that Messrs. Palmer and Gray found a pair of Merlins (*Falco c. æsalon*) breeding on Dartmoor this year (1934). The nest, apparently a deserted one of a Buzzard, was in a willow tree in a secluded gully and contained three Merlin's eggs on May 20th. Mr. White inspected the nest on May 31st when he found the male Merlin sitting tight on the three eggs.

Mr. Walmesley White states that he has no doubt that Merlins have bred for many years on Dartmoor, but that, so far as he knows, this is the first definite record of their having done so.

LETTERS

AN UNRECORDED ESSEX HERONRY.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to Dr. Campbell's note (*antea*, p. 52), serious difficulty was encountered at the time of the 1928 census in getting the estuaries of this part of the coast properly covered, and several of the heronries have only come to light since publication of the original report. In my Supplementary Report (*antea*, Vol. XXIII., pp. 330 and 337), I referred to Harting's record of a former substantial heronry at Tollesbury, which was stated to have been among reeds, and in my Supplementary Notes (*antea*, Vol. XXV., pp. 160-161) I included and discussed a letter from Mr. W. E. Glegg expressing doubt whether such a heronry ever existed. In this letter Mr. Glegg mentioned that he had put the question to the late Dr. J. H. Salter, of Tolleshunt D'Arcy, a veteran sportsman and naturalist, who, from his reply, evidently knew nothing of this heronry, although it was within four miles of him. As so much has been discovered since the original report it seems worth recapitulating that the estuarine heronries now known in Essex as one goes north from the Thames, are :—

1. Bolt Hall Farm, Canewdon, R. Crouch, 32 nests in 1933 (*Brit. Birds*, Vol. XXVII., p. 29).
2. Mundon, R. Blackwater, some 4-5 miles north of the last, 35 nests or less in 1928.
3. Rolls Farm, nr. Tollesbury, also R. Blackwater, about the same distance beyond Mundon, 21 nests in 1934.
4. St. Osyth Park, Colne Estuary, some 11 miles E.N.E. of Tollesbury, with 75 nests in 1928.
5. Skippers Island, Thorpe-le-Soken, on Hamford Water, some 8 miles N.E., with 7-8 nests in 1928.

The fact that all these colonies have existed for years without any, except St. Osyth, being recorded before the 1928 census, suggests that there is still room for profitable investigation in apparently suitable areas where further unrecorded heronries may exist. If the thirteen nests in one tree mentioned by Mr. Campbell were all occupied, Tollesbury can equal in this respect the largest count returned for any one tree in the 1928 census.

E. M. NICHOLSON.

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CONTENTS OF NUMBER 4, VOL. XXVIII., SEPTEMBER 1, 1934.

PAGE

Additions and Alterations to the British List. By H. F. Witherby 90

Breeding of Temminck's Stint in Scotland. By Geo. R. Edwards 97

The Gannet Colonies of Iceland. By Brian Roberts, M.B.O.U. 100

Movements of Ringed Birds from Abroad to the British Isles and from the British Isles Abroad. Addenda III. By H. F. Witherby and E. P. Leach 106

Notes :—

Great Tit Hatching Blue Tit's Eggs (G. Marples) 113

Song-Thrush Attacking Lizard (Rev. F. C. R. Jourdain) ... 113

Robin with Four Broods (B. B. Osmaston) 113

Black-headed Gulls Nesting in Trees (A. W. Boyd) 115

Scandinavian Lesser Black-backed Gull in Somerset and Gloucestershire (K. B. Rooke and K. D. Smith) 117

Short Notes :—

Pomatorhine Skua in Flight. Great Tit Building Underground. Black-tailed Godwit in S. Devon 118

Letters :—

Differences in the Breeding-Habits of Sussex and Cornish Corn-Buntings (D. H. Meares) 119

Blackcap in Atlantic in June (Dr. Ernst Mayr) 119

Merlins Breeding on Dartmoor (F. H. Lancum) 120

Essex Heronries (W. E. Glegg) 120

ADDITIONS AND ALTERATIONS TO THE BRITISH LIST.

BY

H. F. WITHERBY

A SUMMARY of the additions and alterations to the List was given in June, 1932 (Vol. XXVI., p. 16), and since then some further alterations were notified in June, 1933 (Vol. XXVII., pp. 2-3).

As a result of the deliberations of the British Ornithologists' Union List Committee some further necessary additions and alterations have now been published (*Ibis*, 1934, pp. 632-638). These are given below, and the numbers and former names refer to the systematic list printed in the last part of the *Practical Handbook* and reprinted in the *Check-List*.

ADDITIONS.

5A. THE SCANDINAVIAN JACKDAW.—*Colœus monedula monedula* (L.).

CORVUS MONEDULA Linnæus, Syst. Nat., ed. X., I., p. 106 (1758—" Habitat in Europæ agris ". Restricted typical locality Sweden from first reference Fauna Svecica No. 72.)

In the *Practical Handbook* (Vol. I., p. 19, footnote) it was stated that this bird might be an autumn immigrant, but that we had not examined a specimen. In his *Birds of Suffolk* Dr. C. B. Ticehurst showed that the bird did occur, and he has recently exhibited to the Committee two specimens of this form from his collection, taken by Mr. E. Knight at Corton, near Lowestoft, on March 3rd, 1911.

DESCRIPTION.—This form is more tinged with grey on the underparts than *C. m. spermologus* and has a small patch of white or creamy-white feathers at the base of the sides of the neck ; usually also the silver-grey " collar " is paler than in *C. m. spermologus*.

Mr. Jourdain supplies the following :—

DISTRIBUTION.—*Abroad.*—Southern Sweden north to between 63° and 64° N. lat. In Norway it is resident in the south (Sørland, Ostland and Trondelag), but does not occur north of 69° 30′. It also breeds on the Aland Isles and southern Finland up to 61° 30′ on the western side ; and apparently in Esthonia.

BREEDING-HABITS.—Resemble those of the Central European race, nesting in church towers, chimneys, hollow trees, etc. Eggs 5-7, no appreciable difference in size in series of 13 measured. Breeding-season rather later ; first week in May in south, two to three weeks later in north.

373A. THE ARCTIC RINGED PLOVER.—*Charadrius hiaticula tundræ* (P. R. Lowe).

ÆGIALITIS HIATICOLA TUNDRÆ P. R. Lowe, Bull. B.O.C., XXXVI., p. 7 (1915—Yenesei River, Siberia).

This form is also mentioned in the *Practical Handbook* (Vol. II., p. 519, footnote) as possibly occurring in the British Islands, but the late Mrs. Meinertzhagen was unable to differentiate it in winter plumage.

Dr. Carmichael Low has recently gone very fully into the question in these pages (*antea*, pp. 64-66) and has given a description and an account of its distribution. The identified occurrences he enumerates refer to Norfolk, Kent, Sussex and Buckinghamshire, and the dates range from August 2nd to October 20th.

443A. THE BRIDLED TERN.—*Sterna anæthetus* Scop.

STERNA ANÆTHETUS Scopoli, Del. Faun. et. Flor., Insub. II., p. 92 (1786—Panay Island, Philippines).

STERNA ANÆTHETA FULIGULA Licht., G. Mannering, Bull. Brit. Ool. Assoc., Vol. III., No. 9, p. 97.

A Bridled Tern, sometimes called the Lesser Sooty Tern or Panayan Tern, was found dead by Mr. Guy Mannering on the beach, two miles inland from Dungeness, near the Hoppen Pits, on November 19th, 1931. The bird was considerably decomposed, but Mr. Mannering managed to preserve it. It was a male and the stomach was empty. Mr. Mannering thought that it had been struck down by a bird of prey as there was a wound in the breast. It was an adult moulting from summer to winter plumage, the new feathers on the crown being streaked with white, and those on the mantle being tipped with grey.

The bird agreed best with specimens from the Red Sea, the primaries and tail-feathers having less white, and the white of the under-parts being more greyish than in birds from the West Indies. The inner web of the outer primary was white at the base with a wedge of dull white running up from it, while the inner web of the next primary was pale brown with white only at the base. The outer tail-feather was white with a dark tip on the inner web and the next tail-feather was dark brown with only the base of the inner web greyish-white, instead of white with a brown tip as in birds from the West Indies.

The measurements were: wing 250 mm., longest tail-feather (worn) 145, bill from feathers (some forehead feathers lost) approximately 41, tarsus 20.

A good many forms of *Sterna anæthetus* have been described, but the validity of some of these appears doubtful, and consequently it is proposed at present not to define the subspecies. Mr. N. B. Kinnear and the present writer have examined the series in the Natural History Museum as well as the type of Swainson's *Sterna melanoptera* from Gambia, kindly lent by the authorities at Cambridge, this being the only specimen available from West Africa. The latter bird measures: wing 264.5, bill 41.5, outer tail-feather 182, tarsus 22 mm. It differs from western Atlantic specimens—*S. a. recognita* (Mathews)—by having less white in the outer primaries and outer tail-feathers, but it is difficult with the material available to make out any constant differences between it and birds from the Red Sea, which have been separated as *S. a. fuligula* Licht., or between these and birds from the Indian Ocean which have been called *S. a. antarctica* Lesson and the typical form *S. a. anæthetus* Scopoli from the Philippines.

The Bridled Tern may be briefly described as follows :—

Adult male and female, summer.—Forehead white, this extending in a stripe over the eye ; crown, nape, lores and stripe through eye black ; back of neck grey ; mantle, back, wings and tail grey-brown (outer tail-feathers and inner webs of primaries more or less white as described above) ; under-parts white tinged grey. *Winter.*—Feathers of crown and lores streaked white and those of mantle tipped grey.

Juvenile.—Crown, nape, back of neck and lores streaked greyish-white and black-brown, forehead and stripe over eye white ; rest of upper-parts dark brown, feathers narrowly tipped whitish.

First winter.—Appears similar to adult winter, but crown more streaked with white.

Measurements.—Specimens from the Red Sea measure as follows : adult male—wing 245-260 (one 265) mm. ; tail : outer feather 155-174, central 70-76 ; tarsus 20-21.5 ; bill from feathers 39-44 (12 measured) ; ♀ wing 237-252.

Soft parts.—Bill, legs and feet black.

Mr. Jourdain supplies the following :—

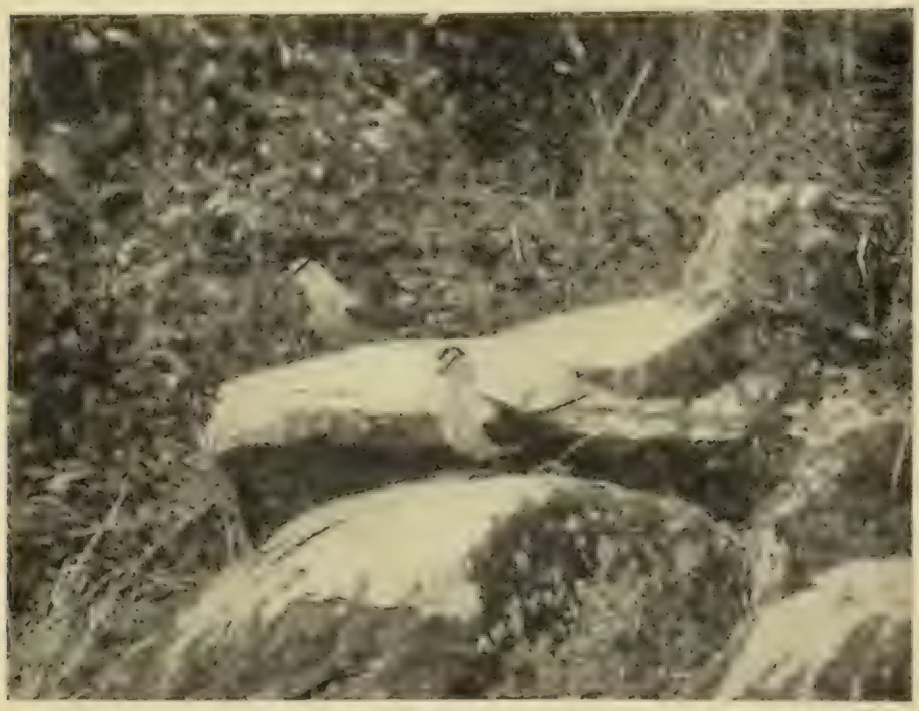
DISTRIBUTION.—*Abroad.*—Excluding the Bahaman and West Indian form (*S. a. recognita*), also the races from Mexico (*S. a. nelsoni*) and the Mascarene Isles (*S. a. antarctica*), we have the Red Sea form (*S. a. fuligula*), which is resident in the southern part of the Red Sea and the Gulf of Aden, eastward to the Persian Gulf and Mekran coast and south along the East African coast to Mozambique. The typical race (*S. a. anæthetus*) breeds in the Philippines, Celebes and on islands off the Chinese coast.

BREEDING-HABITS.—Usually on islets, where the single egg is laid on the ground. No nest is made but advantage is taken of rocky outcrops, long grass, etc., to provide concealment. Average size of

52 eggs of *S. a. fuligula*: 44.2 x 31.2; max. 52 x 32.4 and 46 x 34; min. 41.3 x 31.3 and 45 x 30.2. Ground-colour varies as a rule from creamy to deep salmon-buff, occasionally greenish or bluish, blotched and spotted all over with red-brown and ashy. The breeding-season from late May to August, but most eggs are laid in June-July.

The following notes by Mr. G. C. Madoc on the breeding-habits of this Tern as observed in the South China Sea, and the excellent photograph accompanying them, have been sent to us by his father, Col. H. W. Madoc, who kindly permits us to publish them here.

"On June 14th, 1934, Ryves and I visited the Pulau Burong on the advice of Mr. C. N. Chasen. The Pulau Burong is a group of four small rocky islets, or stacks, precipitous and surrounded by deep water, some 11 miles west of Pulau Tioman. This Tern was breeding in great numbers all over the four stacks. We found eggs only a few feet above the tide-mark laid on the bare rock, others on the cliffs, and yet more concealed in the grass at the summits. These latter were laid on the bare earth, always sheltered by some



Bridled Terns at the nest, Pulau Sepoi, June 19th, 1934.
Part of the egg can be seen in the right-hand corner of the crevice.

rocky outcrop, and were approached by tunnels through the grass. Some of the eggs laid on the rocks were placed on a few strips of dry grass, but these seemed to have got there more by accident than design. Probably they had blown down from above. On the following day some Johore Malays arrived and proceeded to rob the nests systematically on the three climbable stacks. On June 19th we found another large colony of these Terns on Pulau Sepoi, a small island north-west of Tioman. This island resembles a very large stack, being guarded on all sides by cliffs ; but the top, which is strewn with boulders, is also covered with large trees. Here the birds were undisturbed and therefore very tame. We were able to take photographs at ranges of only ten feet. On the other hand the eggs were more closely concealed. They were all at the top of the cliff, concealed under boulders and even amongst the roots of outlying trees. Many of them had been laid on soft mould and were very soiled in consequence. Only one egg is laid, of remarkable size for the bird. In shape the eggs are oval, slightly pointed at one end—not nearly so pointed as most Tern's eggs. The ground-colour when fresh is pale stone-colour, but when incubation is advanced the egg takes a greenish tinge. This appears to be a permanent alteration of the pigment as the colour is retained after blowing. The eggs are thickly spotted and blotched all over with lavender and dark madder brown. In one case there were a few jet-black blotches. The markings, which are very variable, predominate at the larger end. Although in many cases incubation was far advanced we found no young birds "

In the *Practical Handbook* (Vol. II., p. 720, Note) it is mentioned that a specimen of this Tern was said to have been taken on a lightship at the mouth of the Thames in September, 1875, as recorded by Howard Saunders (*Zool.*, 1877, p. 213), but the same author did not consider the evidence sufficiently perfect to warrant the introduction of the species as a British bird in the fourth edition of Yarrell (Vol. III., p. 566). The authorities at the Booth Museum, Brighton, where this bird now is, kindly sent it up for examination, and it was found that it was completing a moult from winter to summer plumage with a number of new (still in sheaths) entirely black feathers on the crown and mantle. The date, September, must therefore be wrong, and this is a final reason for rejecting the record.

NEWLY DESCRIBED BRITISH SUBSPECIES.

In the January, 1934, issue of *The Ibis*, Colonel R. Meinertzhagen described the following new races of birds from South Uist, Outer Hebrides, and these have been added to the List by the B.O.U. Committee.

20A. THE HEBRIDEAN TWITE.—*Carduelis flavirostris bensonorum* (Meinertz.).

ACANTHIS FLAVIROSTRIS BENSONORUM Meinertzhagen, Ibis, 1934, p. 55 (S. Uist, Outer Hebrides).

In a series the Twites from S. Uist are decidedly darker on the upper-parts than birds from the mainland.

In 1921, in *Berajah*, p. 1, Pastor Kleinschmidt described the English bird as distinct from the typical form, naming it "*Loxia Flavirostris parallelicolor*," but we could not agree to this (see *Practical Handbook*, Vol. II., p. 888), and Colonel Meinertzhagen confirms that he is unable to distinguish the differences, but Pastor Kleinschmidt had not seen Outer Hebridean birds.

187A. HEBRIDEAN STONECHAT.—*Saxicola torquata theresae* Meinertz.

SAXICOLA TORQUATA THERESAE Meinertzhagen, Ibis, 1934, p. 56 (S. Uist, Outer Hebrides).

In this form the female is decidedly darker and less yellowish on the upper-parts and of a deeper colour on the breast and flanks, while the males are slightly darker on the upper-parts than in *S. t. hibernans*.

Colonel Meinertzhagen considers that Scottish birds are intermediate and that birds from the west coast of Scotland are perhaps the same as the Outer Hebridean birds. He also considers that Stonechats from Portugal and Brittany are more like *S. t. theresae* than *S. t. hibernans*.

200A. THE HEBRIDEAN HEDGE-SPARROW.—*Prunella modularis hebridium* Meinertz.

PRUNELLA MODULARIS HEBRIDIUM Meinertzhagen, Ibis, 1934, p. 57 (S. Uist, Outer Hebrides).

Darker on the head and under-parts, more red on the upper-parts and with the black streaks of the feathers of the upper-parts blacker and broader and thus more prominent than in English birds.

Colonel Meinertzhagen also described the Irish Hedge-Sparrow as distinct under the name *Prunella modularis hibernicus*, Ibis, 1934, p. 57. These were intermediate in colour between the Hebridean form and *P. m. occidentalis*, but the Committee could not agree that the Irish birds were suciffiently distinct for recognition.

It may be mentioned here that the same author in the article referred to states that the breeding form of the Starling in S. Uist is *Sturnus v. zetlandicus*.

He also states that ten Redwings collected on the island in November and December were all of the Iceland form *Turdus musicus coburni*. This form has also been recorded from Ross-shire, Fair Isle, cos. Galway, Mayo and Donegal, and Kent.

A Dipper obtained in S. Uist in January, Colonel Meinertzhagen states, was even darker than birds of the Irish form, but it may not have been a resident bird. He also states that three Dippers from Arran (west Scotland), now in the British Museum, are of the Irish form.

ALTERATION OF NAMES.

The List Committee propose in this Report that the name of the British Song-Thrush should be altered to *Turdus ericetorum ericetorum* Turton, British Fauna, I., p. 35, 1807, and consequently the Hebridean Song-Thrush to *Turdus ericetorum hebridensis*. In the case of the Continental Song-Thrush, however, an error appears to have been made in proposing to change its name to *Turdus ericetorum planiceps* Ehrenberg, 1833. The name *planiceps* does not, as was supposed, antedate *philomelus*, a confusion having arisen in the division of the two parts (one published in 1828 and the other in 1833) of the *Symbolae Physicae* in which the name *planiceps* appeared. We propose therefore to postpone making any change in the names of the Song-Thrushes in these pages until this point is cleared up.

BREEDING OF TEMMINCK'S STINT IN SCOTLAND.

BY

GEO. R. EDWARDS.

On June 13th, 1934, I was in Scotland with Mr. Vernon S. Crapnell for the purpose of making cine-films of nesting birds. I had just seen my companion into his hide tent and was returning along a loch side when a small wader came off her nest at my feet. The flight was typical of a wader leaving eggs, fluttering and slow. For a few seconds this bird dragged her feet in the water, then made off at top speed.

I passed on and some hours later when Crapnell returned I showed him the nest. The bird had not returned, and as a heavy thunderstorm was working up we left as quickly as possible to allow the bird's return. For two hours heavy rain fell and that evening we visited the nest to determine the species, but to our disappointment the bird had not returned and the eggs and nest were very wet.

Bad weather continued on the 14th and 15th and in the evening of the latter date I filmed the eggs in the nest, then, having completely satisfied ourselves of the desertion, carefully packed them in moss.

We obtained a very close view of the birds during that Friday evening. The distance was twenty feet and we both had field-glasses so that we were able to make accurate notes of plumage, notes and flight.

The eggs were sent to Dr. P. R. Lowe of the Natural History section of the British Museum for identification. He has been very kind in having them blown (they were hard set) and he has gone to some pains for accurate information. The eggs were shown to Mr. J. L. Chaworth Musters and to Dr. M. Schönwetter, who identified them as belonging to the same species as Dr. Lowe and ourselves arrived at independently, namely Temminck's Stint (*Calidris temminckii*). We have presented the eggs to the Museum.

When we left the district on June 16th the birds were displaying, and on arriving home I wrote to Mr. Ralph Chislett, hoping that he might go up and photograph them. Unfortunately he was away and it was not until July 13th that he and I were able to proceed to the spot. Much to our disappointment we were unable to find the birds again notwithstanding a very intensive search of the whole shore of the loch. We can only hope that the birds will appear again next year.

The following are details :—

NEST.—On a small loch side. The nest was eight feet from the water's edge. Sand reached for about two feet, then came short grass and a few reeds. Scattered on the grass was a mass of dried vegetation left by high water during the winter months. In the short grass was the nest quite exposed. It contained not the slightest collected material but was quite a deep, cup-shaped hollow. The ground was so soft that each egg had bedded itself into a little hollow also.

EGGS.—At the first glance like a Dunlin's. Ground colour, olive-green. Underlying markings of purplish-brown and darker brown above.

BIRD.—The best description possible is, exactly like a small Common Sandpiper, both in colour and plumage and in general outline.

The head, back and wings were light brown with greyish edges to some wing-feathers. Down *each* side of the middle back could be detected four tips of dark brown like four black dots. On the rump could be seen a very slight touch of rust.

A faint bar was on the wing but only showed when the wing was spread. The throat was very pale brown. The breast and all under-parts pure white. Rump and tail dusky and white in flight. Bill and legs very dark coloured.

FLIGHT.—Swift and erratic. The birds' movements in the distance were very like Sand-Martin's, although the actual wing beats were typical of the Sandpiper's well-known jerky flight. A most noticeable action was to fly swiftly to about twenty feet high then turn and glide right down to water level with wings held stiffly V shaped (as in Common Pigeon), all the while uttering its call. On shore the bird always ran swiftly with head down and hunched into the shoulders, and with the tail up. The wings were often lifted high above the head for periods of about two or three seconds and this action was always practised before taking flight. The under-side of the wing was silvery white.

SONG.—A short, high-pitched trill, duration about three seconds on the ground and longer when uttered during the gliding flights. When flushed suddenly from the loch side this call was short and sharp like a Snipe's call.

The call was at no time as sustained as the Dunlin's, which we both know well having just completed a film of this species on the Yorkshire hills.

[Dr. P. R. Lowe has very kindly supplied us with the following measurements and weights of the eggs. Dr. Lowe remarks that six Dunlin's eggs weighed on the same delicate balance averaged 490 milligrammes.

	Measurements in millimetres	*Weight in milligrammes*
(1)	29.2 × 20.7	300 ±
(2)	29.4 × 20.9	300 ±
(3)	27.5 × 20.5	300 ±
(4)	28.4 × 20.4	300 ±

In connexion with the above record of the breeding of Temminck's Stint in Scotland, it is a fact of much interest that this species has recently extended its breeding range in Scandinavia considerably to the south. Up to 1929 its most southerly breeding-place near sea-level was on the Lofoten Islands, but it was known to nest at considerable altitudes round Roros (about 70 miles S.E. of Trondhjem). In 1930 Mr. J. L. Chaworth Musters published an article in the *Norsk Ornitologisk Tidsskrift* in which he showed that breeding had taken place at sea-level in Nordmøre, near Surendalsoren, in May, 1929, where a nest is also said to have been found in 1917. Mr. Chaworth Musters also informs us that during the present season Herr H. L. Lövenskiold has still further extended the breeding range southward in Norway, but the details of this discovery have not yet been published.—EDS.]

THE GANNET COLONIES OF ICELAND.

BY

BRIAN ROBERTS, M.B.O.U.

The following notes on colonies of the Gannet (*Sula bassana*) in Iceland are based on two personal visits in 1932 and 1933, and on one by my brother, Sub.-Lieut. P. L. Roberts, R.N., in 1934. There are at present six islands off the Icelandic coast where Gannets breed, and four of these—Brandur, Hellisey, Sulnasker and Geldungur, are close together in the Vestmannaeyjar, a small group of volcanic islands off the south-west coast. There is also a colony on Eldey off Reykjanes, and another on Grímsey off the north coast.

In his monograph on the Gannet (1), J. H. Gurney mentions all of these except Hellisey, which is the largest colony in the Vestmannaeyjar group, but the information he was able to obtain was scanty, and his estimate of the numbers was, in his own words, " open to amendment ".

On August 18th, 1932, I visited the Vestmannaeyjar colonies in company with J. A. Beckett. A full account of this expedition, together with a map and photograph, has already been published (2), so a short summary only will be given here. It was too rough to land on any of the islands, but we were able to form a fairly accurate estimate of the number of breeding-birds by sailing slowly round each rock close under the cliffs. The method of assessing the numbers was to count all the adult birds on the rocks themselves. The census was greatly facilitated by the geological structure of the rock, which caused the birds to sit in definite rows on the ledges, and it would otherwise have been almost impossible to count them. The following table shows the result of our census. The two figures for each cliff-face represent our independent counts :—

Brandur	404	418
Hellisey—E. cliff	973	1,021
,, N.W. cliff	*c.* 600	*c.* 550
,, Remainder	496	489
Sulnasker—S.E. cliff	303	312
,, Remainder (counting together)	717	
Geldungur (counting together)	*c.* 200	

These figures are an absolute minimum, and the estimate for Geldungur may be rather low, as it was beginning to get dark when we reached the island, and there were a number of birds on the upper part of the rock which could not be distinguished very clearly. Adding these figures together, we have a maximum of 3,764 birds for the four colonies and a minimum of 3,636. Taking the lower figure, this gives an estimated total of 3,636 birds actually at the nests, but as, in a proportion of cases, both birds of a pair were at the nest, it may be assumed without exaggeration that they represent 3,000 breeding pairs. Calculating on a minimum basis, we get a total of over 3,900 pairs if only 30 per cent. be added to those on the breeding-ground to allow for pairs of birds away fishing and those in flight over the colony. C. M. Acland and H. Morrey Salmon (3) allowed 50 per cent. for the birds away from the nests in their census of the Gannets on Grassholm, but I consider this figure to be rather excessive.

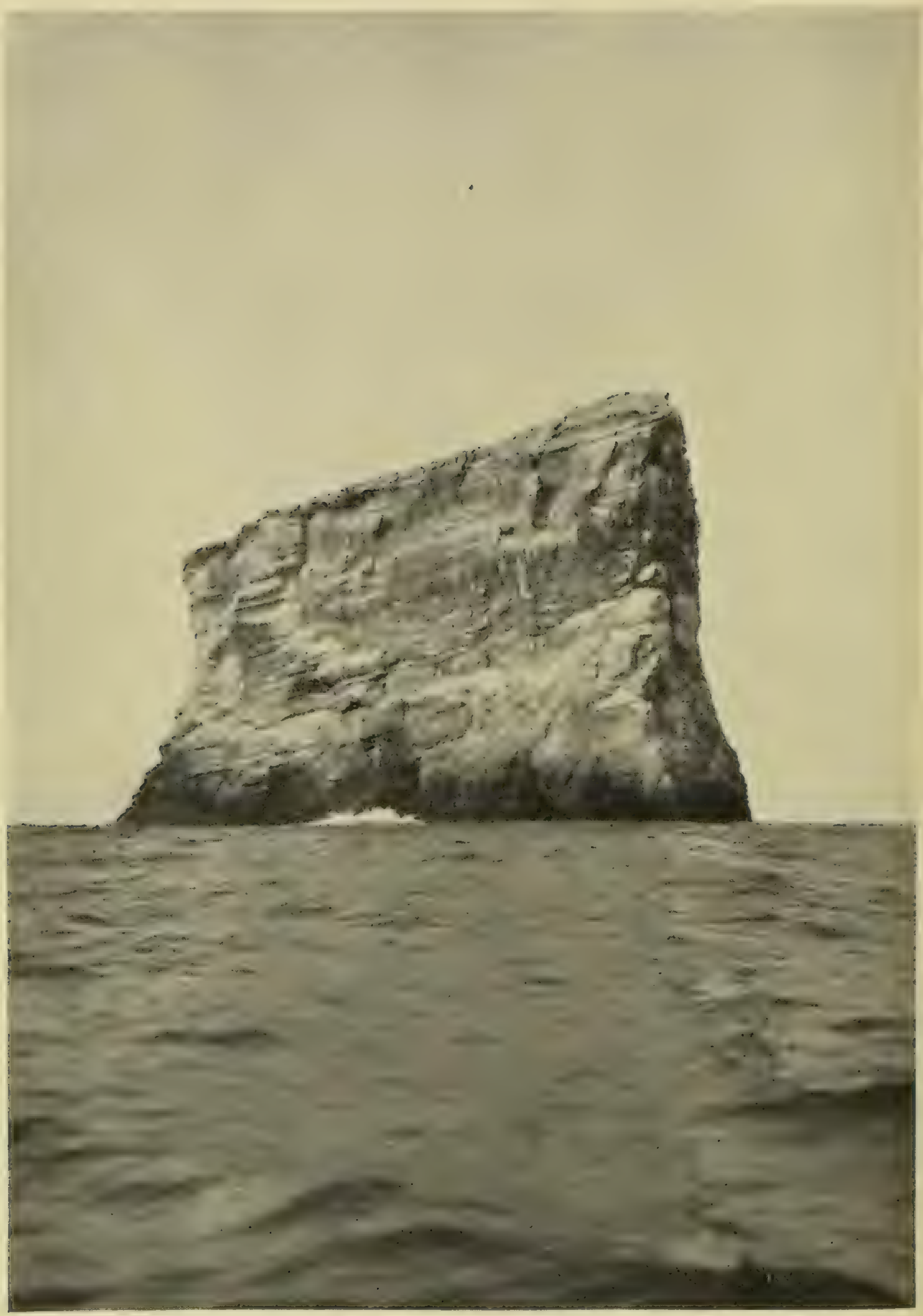
J. H. Gurney put the number at 4,000 birds, a figure which is based on a very rough guess by N. Annandale and E. Gurney in 1898. The former wrote an interesting account of a fowling expedition to Sulnasker which they undertook in September of that year.(4)

In 1933 I spent five days (July 19th-23rd) on Grímsey with G. C. L. Bertram and D. Lack. This is the most northerly breeding place of the Gannet. In 1819 Faber (5) found " only three [pairs] breeding on Grímsey [itself], but ten or twelve on an isolated rock standing close by ". Hantzsch (6), in 1903, records " between 50 and 70 pairs on Hafsúlastapi and on the cliff opposite ".

In 1933 we found 21 occupied nests. The colony is on a wide ledge about 170 feet down the 400 feet cliffs at the north-eastern end of the island. The stack opposite (Hafsúlastapi) has collapsed, and all the birds are now breeding on the main cliff. We descended to the colony with ropes so no nests can have been overlooked. There were at least 28 non-breeding birds present, but only one in immature plumage.

A further Gannet colony is on Eldey, one of the group of volcanic islets off Reykjanes, the south-western point of Iceland. Eldey has achieved fame as the last-known breeding place of the Gare-fowl (*Alca impennis*) and it was here that the last one was killed in 1844. Newton and Wolley (7) have collected together all that is known of its early history in this connexion, so it will not be repeated here.

The few estimates as to the number of Gannets on the rock in the past are not very enlightening. Gurney quotes P. Nielsen, who was informed by an Icelander, Hjalti Jonsson, that " there might be 20,000 Gannets on Eldey in 1870 ",



Eldey from S.S.W.
(*Photographed by* Lieut. R. C Egan, R.N.)

but in 1904 the same correspondent considered that "6,000 or 8,000 was perhaps enough". Nielsen himself, however, wrote in 1919, that "about 10,000 Gannets nest yearly" (8). This figure is repeated in Newton's *Ootheca Wolleyana* (Part IV., p. 458), but when Nielsen was asked whether it represented birds or pairs, he was unable to say.

During April and May, 1934, *H.M.S. Cherwell* was in Icelandic waters for fishery protection duties; and as our trawlers were working off the south and west coasts, she was able to visit Eldey. I am indebted to my brother, Sub.-Lieut. P. L. Roberts, R.N., who was on board, for sending me the following account :—

> "We passed within a quarter of a mile of Eldey when on patrol on April 24th, but it was getting dark and raining so we did not stop. The small glimpse we had was very impressive and we decided to examine it more closely if an opportunity arose.

Eldey from N.N.E. at about 500 yards.
(*Photographed by* Petty Officer R. G. Hatcher, R.N.)

> "In the middle of the next month we were working off Reykjanes again, and at 4 p.m., on May 22nd, closed the island. It was visible from forty miles away, a landmark that we knew well.
>
> "The rock is 226 feet high with vertical cliffs all round. It is roughly pear-shaped, with a flat top of about 3 acres gently sloping towards the broad end at the north. As a result, although we could

> see the whole of the top from a distance of 400 yards, none of it was visible from closer in, and without landing a reliable estimate of the Gannets would be impossible. But a rough guess, based on the area of the top and the average concentration of the Gannets, gives about 14,000 birds. In addition there were at least 500 on the cliffs and many hundreds in the air.
>
> "From a distance the top appeared so thickly covered with Gannets that it was almost a uniform white and the air was thick with birds disturbed by our approach. We lowered the skiff to pull round and look more closely. Seals appeared all round us and we saw them playing in the surf under the cliffs. There were also large flocks of Red-necked Phalaropes resting on the water, and a few Puffins. The cliffs were covered with broken ledges, and these were packed tight with Gannets, Kittiwakes and Guillemots, shoulder to shoulder, and usually well mixed, but the top appeared to be used exclusively by the Gannets.
>
> "At the north-east end there is a small flat ledge which is the only possible landing place. The first men to land left chains hanging from the cliffs and cut footholds in the rocks, but these are so old now that they must be dangerous to rely on alone. Anyone intending to climb the cliff should come well provided with ropes of his own.
>
> "The south end of the island is the finest; the ledges there are very narrow and were mostly occupied by Guillemots. We took several photographs on the way round, but it was too rough to land. After the ship had picked us up we steamed once more round the island and then continued on patrol."

If we allow 30 per cent. for birds away fishing or in flight over the colony, we may estimate approximately 9,000 pairs of Gannets breeding on Eldey, a figure which is nearly double that of Gurney, who allows 9,500 birds for Eldey and Geirfugladrangr together. Careful enquiries about the latter island, which is about 9 miles south-west of Eldey, have produced no evidence of a Gannet colony there. According to the *Arctic Pilot* this rock is scarcely 30 feet high, so it appears unlikely that any birds breed there. Only one landing has been made on Geirfugladrangr, by a Dane, Count F. C. Rabben, who accompanied Faber when collecting material for his fauna of Iceland in 1821. An account of this expedition is given in Faber's work (9), but no mention is made of Gannets breeding there at this time and it only states that some were shot near Geirfugladrangr. The party did not go near Eldey.

The six occupied Icelandic Gannet colonies would seem, therefore, to consist of about 13,600 pairs, made up as follows :

Grímsey	21 pairs.
Eldey	*c.* 9,000 ,,
Vestmannaeyjar—	
Brandur	*c.* 530 ,,
Hellisey	*c.* 2,600 ,,

Geldungur	*c.* 260 pairs
Sulnasker	*c.* 1,300 ,,

Reports of Gannet colonies on Drangey, Langanes and Mevenklint are without foundation.

REFERENCES.

1. Gurney, J. H. - *The Gannet, a Bird with a History.* (London, 1913), pp. 271-288.
2. Roberts, B. B. - "Notes on the Birds of Central and South-East Iceland". *Ibis.* Series 13. Vol. VI., 1934, pp. 245-248.
3. Acland, C. M., and Salmon, H. M. - " The Grassholm Gannets in 1924—a great increase. *British Birds,* Dec., 1924, pp. 178-185.
4. Annandale, N. - *The Faroes and Iceland.* (Oxford, 1905). pp. 117-123.
5. Faber, F. - - *Prodromus der islandischen Ornithologie.* (Copenhagen, 1822.)
6. Hantzsch, B. - *Beitrag zur Kenntnis der Vögelwelt Islands.* (Berlin, 1905.)
7. Newton, A. - - " Abstract of Mr. Wolley's Researches in Iceland respecting the Gare-fowl or Great Auk (*Alca impennis,* L.)." *Ibis.* Series I., Vol. III., 1861, pp. 371-399.
8. Nielsen, P. - - " Optegnelser vedrørende Islands Fugle, tildels efter egen iagttagelse i en laengere aaraeke." *Dansk Ornithologisk Forenings Tidsskrift.* Copenhagen, 1919, XIII., pp. 33-79.
9. Faber, F. - - *Ueber das Leben der hochnordischen Vögel.* (Leipzig, 1825.)

MOVEMENTS OF RINGED BIRDS FROM ABROAD TO THE BRITISH ISLES AND FROM THE BRITISH ISLES ABROAD.

ADDENDA III.[*]

BY

H. F. WITHERBY AND E. P. LEACH.

THE following must be added to the list of stations previously given :—

Abbreviation used.	*Inscription on Ring.*	*Organization.*	*Director*
BP.	Ornithologia Budapest	Königlich Ungarisches Ornithologisches Institut.	J. Schenk.

ROOK (*Corvus f. frugilegus*).

Only in the last few years have we obtained records to show the origin of our winter immigrant Rooks, but the information is now gradually accumulating.

So far we have no ringing record of a British-bred Rook migrating oversea.

RINGED ABROAD IN BREEDING-SEASON.

		Ringed.		*Recovered.*	
R.	D58512	East Prussia	2.6.32	Lincolnshire	25.2.34
R.	D52754	Hannover, Germany	17.5.31	Norfolk	—.11.32
R.	D54955	Ditto	18.5.32	Suffolk	26.2.34

JACKDAW (*Colœus m. spermologus*).

This is the first record of a ringed Jackdaw migrating from or to the Continent.

RINGED IN GREAT BRITAIN AS ADULT AND RECOVERED ABROAD IN BREEDING-PLACE.

Ringed.		*Recovered.*	
Oxford	24.2.33	Guelderland, Holland	—.4.24

STARLING (*Sturnus v. vulgaris*).

So many additional records have come to hand under categories (*a*) and (*c*) that it has been thought well to give here a revised map.† We have now 164 records of ringed Starlings showing where winter visitors to this country were bred, besides many others, in category (*b*), which were probably not far from their breeding place. Though it is not possible in so small a scale to plot positions with accuracy, the map gives a good idea of the areas from which our immigrants come.

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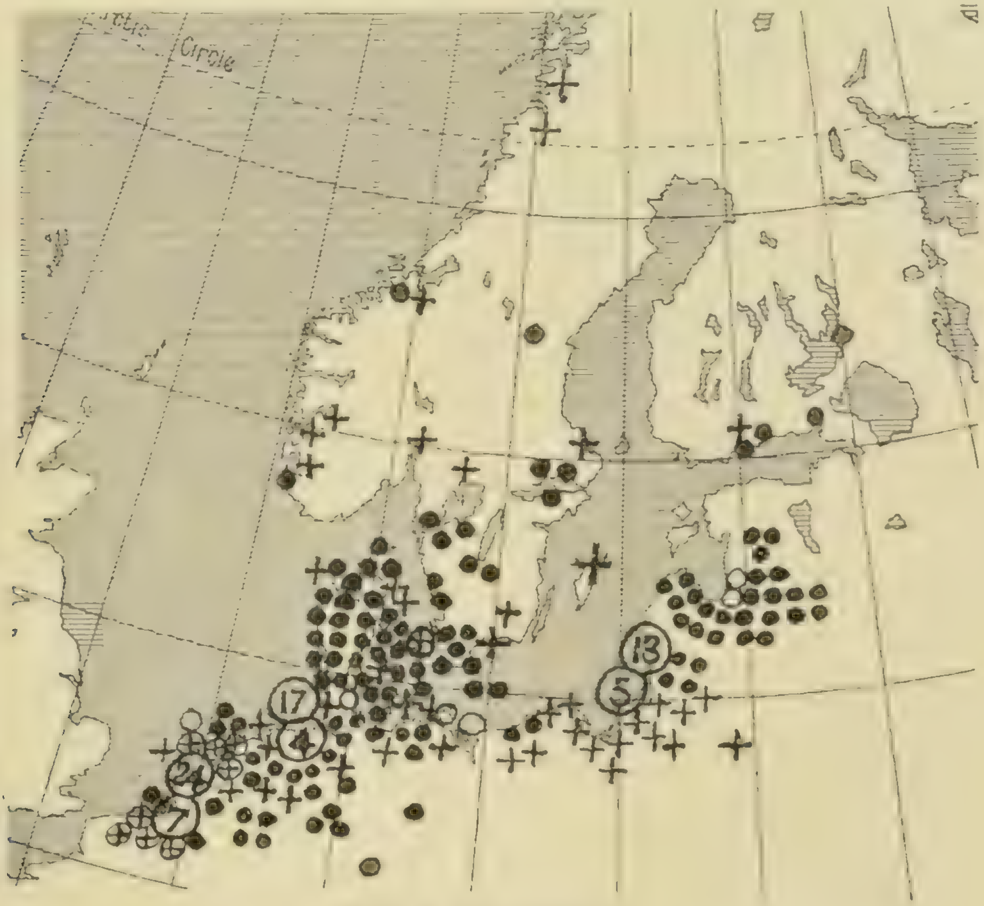
[*] For previous parts see Vol. XXV., pp. 110-128 ; 174-192 ; 245-268 ; 357-360. Vol. XXVI., pp. 352-361.

† We have had lantern slides prepared of some 25 maps illustrating this series of articles. These slides were shown at the International Ornithological Congress, and are now available for loan to *British Birds* ringers under certain conditions. Those desiring to borrow the slides should apply with details to H. F. Witherby, at 326 High Holborn, W.C.1.



STARLING
(Sturnus v vulgaris.)
Map to show origin of winter visitors to British Islands.

● *Ringed here as native. Recovered British Isles between October & April.*
+ *Recovered here as breeding bird. Ringed Great Britain between October & March.*
○ *Ringed here probably on migration. Recovered British Isles in winter.*
⊕ *Recovered here. uncertain whether migrant or native. Ringed Great Britain between October & March.*

(*a*) RINGED ABROAD AS YOUNG OR IN BREEDING-SEASON.

		Ringed.		*Recovered.*	
Ra.	42212	Livonia, Latvia	30.5.31	Shropshire	—.11.33
Ra.	39607	Ditto	4.5.30	Warwicks.	—.3.33
Ra.	39752	Ditto	8.6.32	Kent	12.11.32
Ra.	37433	Ditto	6.6.31	Somerset.	—.1.32

STARLING—(*continued*).

	Ringed.		*Recovered.*	
Ra. 36578	Kurland, Latvia	12.6.33	Lancashire	16.11.33
Ra. 21186	Ditto	6.6.30	Norfolk	2.3.34
Ra. 36160	Ditto	2.6.33	Meath	6.12.33
Ra. 61454	Latgale, Latvia	4.6.33	Northumb.	18.1.34
Ra. 32257	Ditto	7.6.31	Yorkshire	21.1.33
La. F5947	Birzai, Lithuania	10.6.33	Cheshire	12.12.33
La. F5336	Vabalninkas, Lithuania	6.6.33	Kerry	8.3.34
H. 660436A	Hannover, Germany	12.6.33	Devon.	—.11.33
R. F117291	Ditto	3.6.32	Ditto	9.2.34
H. 696802	Westphalia, Germany	2.6.31	Ditto	—.12.31
Stav. 6327	Stavanger, Norway	29.5.33	Fermanagh	22.12.33
G. B5256	Västmanland, Sweden	4.6.33	Dublin	5.12.33
St. D4769	Elfsborg, Sweden	5.6.33	Kildare	6.2.34
St. D5672	Halland, Sweden	10.6.32	Beds.	27.2.33
G. B5915	Scania, Sweden	2.6.32	Lancashire	26.1.33
St. D3008	Ditto	29.5.32	Gloucester.	6.3.33
St. D5654	Ditto	—.6.32	Cornwall	26.2.34
Sk. T10741	Jylland, Denmark	5.7.33	Carmarthens.	25.12.33
Sk. T9087	Ditto	26.5.33	Somerset.	20.12.33
R. F84823	Schleswig-Holstein	22.5.33	Hereford.	—.12.33
H. 737421	Ditto	27.5.33	Carmarthens.	8.3.34
H. 680734	Ditto	29.5.32	Ditto	8.12.33
H. 743805	Ditto	30.5.33	Glamorgan.	1.1.34
H. 700249	Ditto	24.5.32	Cornwall	29.12.32
H. 6994A	Ditto	24.5.32	Ditto	13.12.33
H. 616675A	Oldenburg, Germany	19.5.33	Leicester.	21.2.34
H. 622138A	Ditto	1.6.32	Essex	27.12.33

(*b*) RINGED ABROAD. UNCERTAIN WHERE BREEDING.

Ra. 36984	Livonia, Latvia	25.9.30	Norfolk	25.1.33
La. F8104	Memel Territory	14.7.33	Staffs.	24.11.33
La. F8757	Ditto	22.7.33	Gloucester.	28.1.34
La. F8324	Ditto	17.7.33	Suffolk	—.1.34
La. F4499	Ditto	25.6.33	Warwicks.	16.12.33
R. F125394	Ditto	25.6.33	Cheshire	9.12.33
R. F149347	Ditto	20.7.33	Worcester.	10.12.33
R. F150545	Ditto	14.8.33	Norfolk	11.12.33
R. F125494	Ditto	26.6.33	Gloucester.	4.2.34
R. F149094	Ditto	17.7.33	Kent	15.4.34
			(dead some time)	
R. F148285	Ditto	4.7.33	Sussex	—.1.34
R. F122666	Ditto	23.6.33	Hampshire	8.12.33
R. F150469	Ditto	5.8.33	Ditto	4.2.34
R. F150329	Ditto	2.8.33	Scilly Is.	8.12.33
H. 722142	Pomerania, Germany	29.3.32	Wilts.	22.12.33
H. 734570	Schleswig-Holstein	28.10.32	Sussex	15.11.33
H. 735695	Heligoland	28.10.32	Yorks.	7.2.34
H. 735671	Ditto	29.10.32	Essex	18.12.33
H. 750751	Ditto	14.10.33	Cornwall	—.1.34
H. 748574	Mellum, North Sea	17.7.33	Lincolnshire	12.11.33
H. 748534	Ditto	17.7.33	Norfolk	—.12.33
H. 748587	Ditto	17.7.33	Pembroke.	21.12.33
L. 104277	Zuid Holland	28.10.31	Yorks.	11.11.33

STARLING—(*continued*).

		Ringed.		*Recovered.*	
L.	94051	Zuid Holland	26.3.31	Wilts.	19.1.33
L.	67027	Ditto	19.2.29	Essex	10.2.34
L.	100521	Ditto	13.12.31	Ditto	25.2.34
L.	96599	Ditto	11.4.31	Kent	19.1.33
L.	106572	Ditto	25.10.32	Dorset.	8.11.33
L.	78019	Ditto	9.11.29	Devon.	9.4.32
L.	96171	Ditto	3.4.31	Ditto	6.3.33
L.	96500	Ditto	8.4.31	Ditto	20.2.33
L.	103687	Ditto	17.10.31	Glamorgan.	17.4.32
L.	106785	Ditto	18.9.33	Ditto	—.12.33
L.	89584	Ditto	17.10.30	Carlow	19.12.32
B.	CC313	W. Flanders, Belgium	16.9.31	Warwicks.	—.4.32
B.	CC8141	Ditto	30.10.33	Berks.	31.3.34
B.	CC8188	Ditto	30.10.33	Ditto	24.1.34
B.	CC402	Ditto	19.9.32	Suffolk	22.5.33
B.	CC1239	Ditto	1.11.32	Sussex	21.12.32

(*c*) RINGED GREAT BRITAIN AS WINTER VISITORS OR MIGRANTS AND RECOVERED ABROAD IN BREEDING-PLACE.

Ringed.		*Recovered.*	
Oxford	22.1.34	Vieksniai, Lithuania	15.4.34
Cheshire	30.1.34	Zidikai, Lithuania	29.4.34
Ditto	17.12.33	East Prussia, Germany	21.5.34
Oxford	31.10.31	Ditto	23.4.34
Ditto	24.1.33	Ditto	—.3.33
Ditto	23.11.33	Ditto	15.3.34
Ditto	12.12.28	Pomerellia, Poland	20.3.34
Cheshire	1.11.33	Mecklenburg, Germany	—.4.34
Ditto	17.1.26	Oldenburg, Germany	30.4.34
Devon.	16.1.33	Bremen, Germany	11.4.33
Oxford	25.1.33	Upsala, Sweden	11.4.34
Cheshire	30.1.33	Smaland, Sweden	19.4.33
Worcester.	5.3.33	Fyen, Denmark	29.5.33
Middlesex	28.10.33	Guelderland, Holland	—.3.34
Yorks.	16.2.34	Friesland, Holland	31.5.34

SISKIN (*Carduelis spinus*).

RINGED ABROAD AS ADULT.

	Ringed.		*Recovered.*	
H. 8023063	Breslau, Silesia	12.10.33	Shropshire	1.3.34

LINNET (*Carduelis c. cannabina*).

South-west France remains the southern limit of those of our Linnets which migrate, at least so far as ringing records show. All those reported so far have been ringed as nestlings and none north of the midlands.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Gloucester.	21.5.33	Gironde, France	10.10.33
Bucks.	4.6.32	Ditto	23.10.33

CHAFFINCH (*Fringilla c. cœlebs*).

The three records below are the first Chaffinches ringed in the British Islands that have been reported from abroad. So far none of the records show where our immigrant Chaffinches breed.

RINGED ABROAD, BREEDING-PLACE UNCERTAIN.

	Ringed.		*Recovered.*	
B. BB8848	Brussels, Belgium	10.10.30	Kent	22.3.32
B. AA1905	Ditto	1.11.29	Londonderry	11.1.32

RINGED GREAT BRITAIN, RECOVERED ABROAD, BREEDING-PLACE UNCERTAIN.

Ringed.		*Recovered.*	
Cheshire	20.1.34	Zuid Holland	27.3.34
Worcester.	4.3.33	Antwerp, Belgium	23.10.33
Oxford	2.3.33	Ditto	15.10.33

BRAMBLING (*Fringilla montifringilla*).

It is very difficult to account for this Brambling being found so far south of the bird's breeding limit at this date ; and its position is curious when considered in relation to its visit to us in the winter of 1931.

Ringed.		*Recovered.*	
Cheshire	4.2.31	Krajina, Yugoslavia	12.7.33

YELLOW WAGTAIL (*Motacilla f. rayi*).

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Surrey	5.6.33	Landes, France	20.9.33

MISTLE-THRUSH (*Turdus v. viscivorus*).

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Cumberland	—.6.32	Loir-et-Cher, France	26.11.33
Fife.	2.5.32	Gers, France	5.12.32

BRITISH SONG-THRUSH (*Turdus ph. clarkei*).

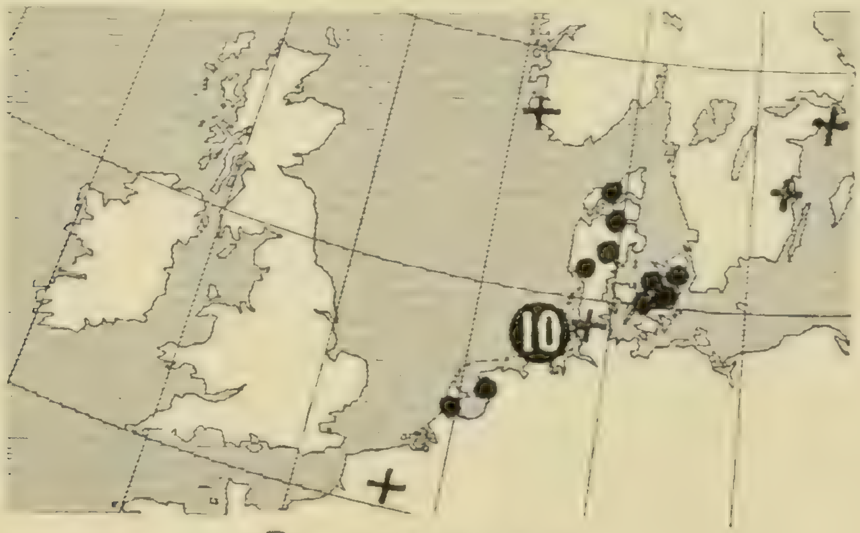
These and other cases already recorded show that some of those of our Song-Thrushes which migrate, winter in northern France, while others go as far south as southern Portugal and east central Spain.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Kent	24.5.33	Côtes-du-Nord, France	—.1.34
Suffolk	24.5.33	Morbihan, France	2.1.34

BLACKBIRD (*Turdus m. merula*).

Only two ringed British-bred Blackbirds have so far been reported from abroad, from which it is evident that only a very small proportion of our birds migrate. On the other hand, records showing the origin of winter visitors have increased considerably during the last few years and it seems worth while to give a revised map of these.



BLACKBIRD.
(*Turdus m. merula*)
Map to show origin of winter visitors to British Islands.

● *Ringed here. Recovered in British Isles between November & March*
+ *Recovered here. Ringed in Great Britain December to March.*

RINGED ABROAD AS YOUNG.

		Ringed.		*Recovered.*	
Sk.	T7737	Jylland, Denmark	8.7.32	Ayrshire	17.11.33
C.	T572	Sjælland, Denmark	18.6.32	Berwick-on-Tweed	27.1.33

RINGED ABROAD, PROBABLY AS MIGRANTS.

		Ringed.		*Recovered.*	
H.	736314	Heligoland	1.11.32	Middlesex	—.12.33
H.	742143	Ditto	30.10.33	Ditto	30.11.33
H.	64023A	Ditto	9.10.31	Dublin	16.1.34

RINGED GREAT BRITAIN AS WINTER VISITOR OR MIGRANT AND RECOVERED ABROAD IN BREEDING-PLACE.

Ringed.		*Recovered.*	
Yorks.	5.3.33.	Stockholm, Sweden	6.7.33

BRITISH ROBIN (*Erithacus r. melophilus*).

This is only the third ringed British-bred Robin to be reported from abroad.

Ringed.		*Recovered.*	
Hereford.	22.5.30	Seine Inf., France	11.12.33

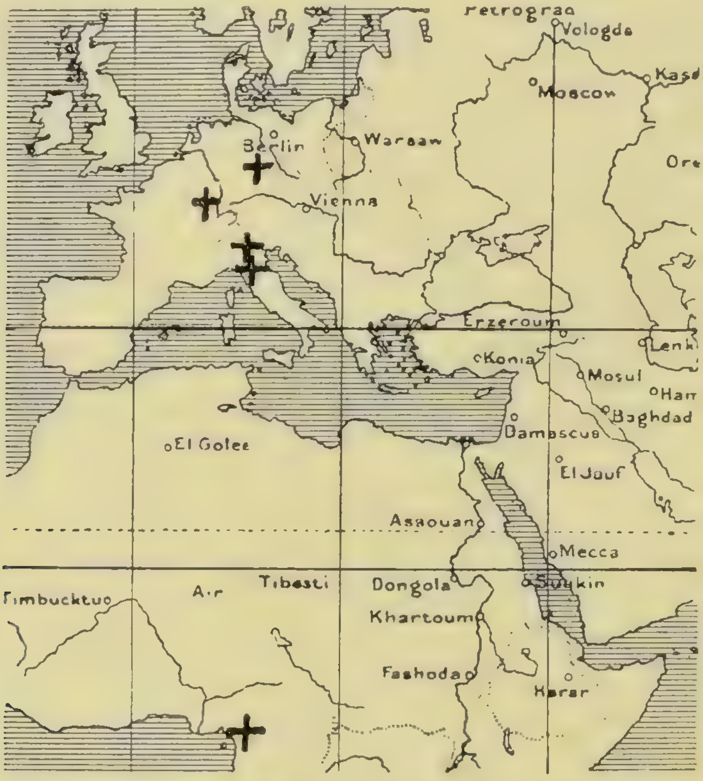
CUCKOO (*Cuculus c. canorus*).

This second recovery in north Italy of a Cuckoo bred in the British Islands is of considerable value, and the four European records, which can now be shown on the map, confirm the south-eastern route taken by this species.

It may be mentioned that all these four Cuckoos had Meadow-Pipits (*Anthus pratensis*) as foster parents, and that the one recovered in the Cameroons was in a nest of a Pied Wagtail (*Motacilla a. yarrellii*).

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Kildare	29.6.33	Brescia, Italy	20.10.33



CUCKOO.
(*Cuculus c. canorus*)
Map showing recovery positions of birds ringed as nestlings in Great Britain

LONG-EARED OWL (*Asio o. otus*).

RINGED ABROAD.

		Ringed.		*Recovered.*	
L.	102661	Noord Holland	8.6.32	Bucks.	3.11.32

(*To be continued.*)

NOTES

GREAT TIT HATCHING BLUE TIT'S EGGS.

A Blue Tit (*Parus c. obscurus*) had possession of one of my nesting boxes in Hampshire and laid an egg on each of four successive days. The next day, May 8th, no egg was laid, but another appeared on the 9th. I should say that I numbered each egg the day it was laid. On May 10th I found, to my surprise, *three* new eggs, two belonging to the Blue Tit and another decidedly larger. The 11th saw another large egg, and the large eggs were explained by the presence of a Great Tit (*P. m. newtoni*) which I caught sitting in the box. The Blue Tits now disappeared. The Great Tit continued to lay, producing one egg each day except the 15th, which was blank, and the 18th, on which two eggs appeared. There were now seven Blue Tit eggs and ten Great Tit eggs in the nest. As the embryos were required for an investigation eight of the Great Tit eggs were removed at different stages and she was left with two eggs of her own and the seven laid by the Blue Tit. On these she sat and in due course all were hatched, and both sets of young were fed and safely got off by the Great Tits.
George Marples.

SONG-THRUSH ATTACKING LIZARD.

In a garden at Southbourne, Hants, Miss Ansell saw a Song-Thrush (*Turdus ph. clarkei*) attacking a common lizard (*L. vivipara*) which shed its tail and managed to escape. The tail was, however, seized and swallowed with some difficulty by the Thrush. The case is interesting, as showing that the power of shedding the tail has at times, as might be expected, a real survival value. The Mistle-Thrush has been recorded as attacking a slow-worm (*Anguis fragilis*), but I have no previous records of Song-Thrushes adopting this unusual habit, but probably the long drought has caused great privation among them.
F. C. R. Jourdain.

ROBIN WITH FOUR BROODS.

A cock Robin (*Erithacus r. melophilus*) has frequented my garden in Oxford for the past three years at least. In November, 1933, I decided to try and tame him. With the aid of mealworms this was soon effected and in less than a fortnight he would hop on to my knee and take food from my hand or mouth.

Early in March, 1934, he found a mate and the hen started building in another garden across the Banbury Road. The position of the nest was discovered by me on March 28th by watching the male carrying mealworms, supplied by me, to the hen. The nest contained five fresh eggs.

On April 8th these eggs hatched and all went well till April 13th, when a cat discovered the nest and destroyed the whole brood.

On April 18th the hen Robin commenced building her second nest in my garden, in a box placed in ivy on a wall.

On April 27th she was sitting on five eggs, four of which hatched on May 9th-10th.

On May 22nd the hen started building Nest III. in a hole in the tool-shed, 35 yards from Nest II.

On May 23rd the young left Nest No. II. and from then on were fed entirely by the male until June 7th.

From June 3rd the cock fed the hen on the nest occasionally as well as the young.

Three out of the four eggs in Nest III. hatched on June 11th-12th, and both birds fed the young in the nest, but chiefly the male, till June 19th when the hen started building Nest IV. in the box which had been occupied by Nest II. (the old nest having been removed by me after the young had left).

On June 23rd the young left Nest III. Nest IV. now contained two eggs.

On June 26th the hen commenced sitting on five eggs in Nest IV. The male Robin continued feeding the young of Nest III. till July 3rd, after which he fed the female on Nest IV.

On July 8th-9th the five eggs in Nest IV. hatched off.

July 10th to 14th. Both Robins feeding young in nest but specially the male.

On July 15th a cat discovered the nest and destroyed the half-fledged brood.

On July 20th the male Robin began its moult, and the female disappeared. Up till July 18th the cock Robin sang at intervals between feeding young. After the moult commenced he ceased singing and became apparently nervous, often giving his alarm note (a click). He is now tailless and in full moult.

The points of special interest in the account of the breeding of these Robins seem to be :—

(1) The *overlap* in time between Nests II. and III. and still more III. and IV. In the first case the female

started building Nest III. one day before the young left Nest II. and similarly the building of Nest IV. started *four days* before the young left Nest III.

(2) The female did all the building unassisted by the male.

(3) The male fed the young after leaving the nest (and in the nest after the commencement of the next nest) unaided by the female.

(4) The male disposed of the fæces removed from the nest invariably by flying up into a tree and wiping them off on to a twig. They were never dropped during flight as is so commonly the practice with other birds.

(5) The male attacked anyone approaching the nest too closely, pecking them viciously on hands or head.

The overlap of the nests is shown below in tabular form :—

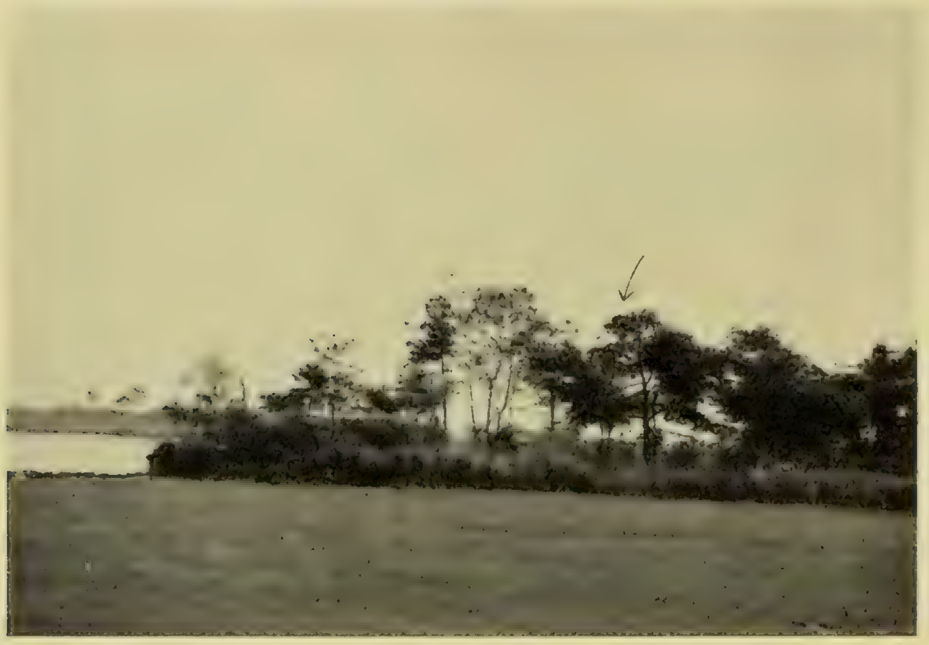
	Nest I.	*Nest II.*	*Nest III.*	*Nest IV*
March 16th	Building nest.			
March 28th	Sitting on 5 eggs.			
April 8th	5 eggs hatched.			
April 13th	Young destroyed by cat.			
April 18th		Building nest.		
April 23rd		1st egg laid.		
April 27th		Sitting on 5 eggs.		
May 9–10th		4 eggs hatched. 1 addled.		
May 22nd			Building nest.	
May 23rd		Young left nest.		
May 29th			Hen sitting on 4 eggs.	
June 11–12th			3 eggs hatched. 1 addled.	
June 19th				Building nest.
June 22nd				1st egg laid.
June 23rd			Young left nest.	2nd egg laid.
June 26th				Sitting on 5 eggs.
July 8th				5 eggs hatched.
July 15th				Young destroyed by cat.

B. B. OSMASTON.

BLACK-HEADED GULLS NESTING IN TREES.

A MARSH at the end of Oakmere, in the Delamere Forest district of Cheshire, has been used since 1910 as a breeding-place by Black-headed Gulls (*Larus r. ridibundus*) (*British Birds*, Vol. XIV., p. 165). This year (1934) they returned as usual and I have learnt from George Rock, the keeper, that they came back about March 20th but during the daytime only, and first stayed for the night on April 15th ; they then settled down and nested in plenty and he estimated that there were some 300 or 400 pairs.

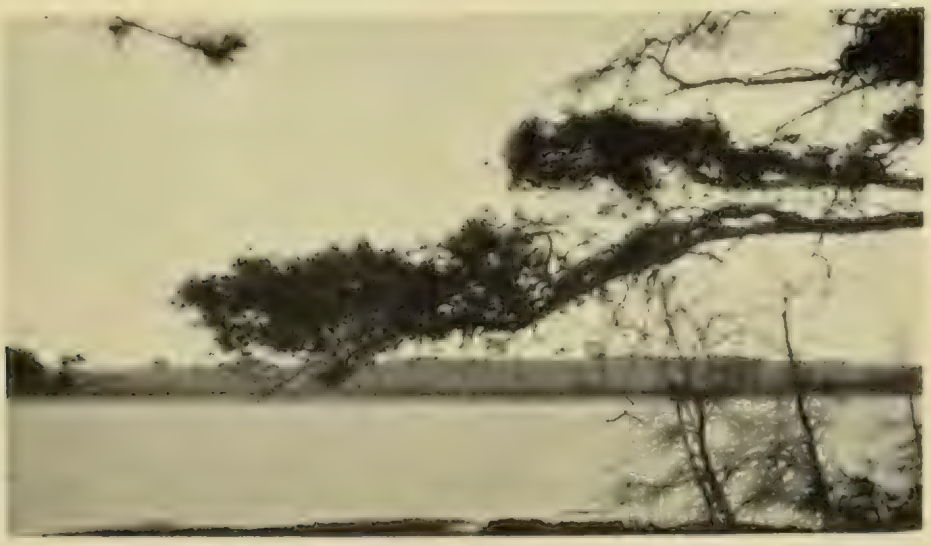
The mere has in recent years been used as a town's water-supply, and the consequent drawing of water from it and the drought have combined to bring the level of the water very low ; as the water receded and the marsh grew drier, foxes got among the Gulls and by June 27th, when I revisited the mere, had driven them all away with the exception of two pairs which nested in Scots pines. One of these nests was built in the crown of a tree in the topmost twigs, as will be seen in the accompanying photograph. It was between twenty and twenty-five feet from the ground and was quite open to the sky ; there was a foundation of hay and grass about three inches thick and a lining of rushes from the marsh and it contained three typical eggs.



Site of nest (shown by arrow) of Black-headed Gull at Oakmere, Cheshire, June 27th, 1934. Normally the grassy area in foreground is covered with water, and the Gulls nest in tussocks of reeds to the right of it.

The other nest—in another tree—was made of rushes only, and was built on a horizontal bough about twelve feet above the water, over which the bough projected ; it also contained eggs.

On July 8th three youngsters from the tree-top nest were swimming safely in the mere, and the other nest, beneath which a dead chick had been found, still held one unhatched egg.



Site of nest of Black-headed Gull at Oakmere, Cheshire, June 27th, 1934. The nest is in the higher of the two horizontal boughs.

The *Practical Handbook* states that the Black-headed Gull "exceptionally has nested . . . on low trees," and it is evident that a nest built in the top of a tree is most unusual. It is interesting to note that the nearly allied American species, Bonaparte's Gull (*Larus philadelphia*) habitually nests on tree and bushes (Dresser: *Manual of Palæarctic Birds*) and on the side-branches of spruce firs (*Practical Handbook*).
A. W. BOYD.

SCANDINAVIAN LESSER BLACK-BACKED GULL IN SOMERSET AND GLOUCESTERSHIRE.

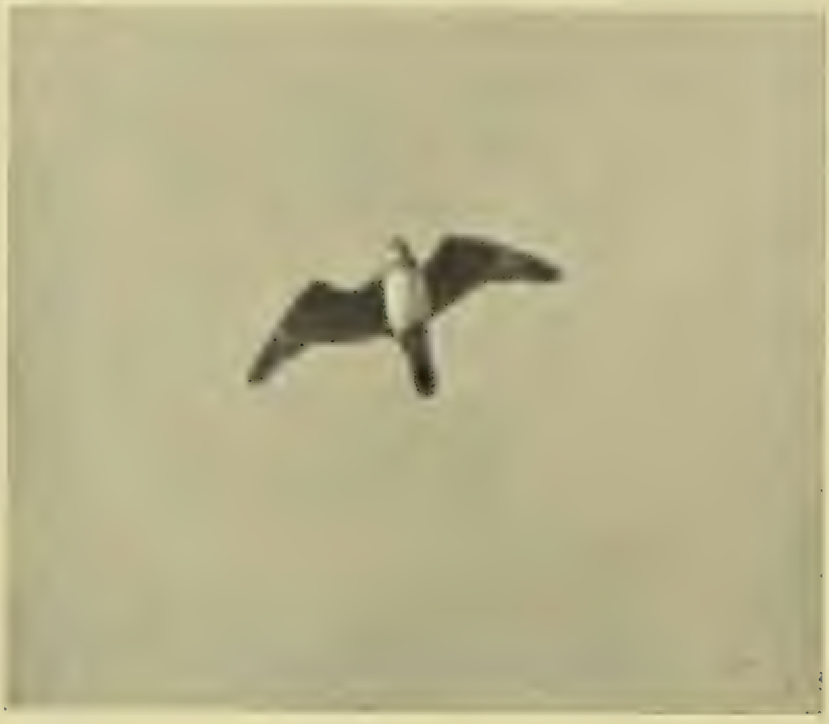
IN view of the fact that little is known of the status of the Scandinavian Lesser Black-backed Gull (*Larus f. fuscus*) in the West of England, it will be of interest to record that we had one under observation for over an hour at Sea Mills, Bristol, on July 21st, 1934.

Several adults of the British race (*Larus f. graellsii*) were flying round close to us, and we had just remarked how easy it was to distinguish them from Great Black-backed Gulls by the very noticeable difference between the black on the primary tips and the comparatively pale slate of the mantle, both of which appear uniformly black in the Great Black-backed. Shortly afterwards a gull with a very dark mantle flew towards us, which, in spite of its rather small size, we took to be a bird of the latter species. When it turned, however, it clearly showed its bright yellow legs—it was only fifteen yards away at the time and the light was exceptionally good. Several times it flew past close to us, but even through binoculars the mantle and wing tips looked uniformly black; there was no question of a tricky light, for adult British Lesser Black-backed Gulls were flying past in the same place and in them the difference was strikingly obvious. That we were watching an adult of the Scandinavian race there was no possible doubt. The colour of the mantle of the British birds is well known to vary, but in all of them the mantle is easily seen to be paler than the wing tips, when anything like a good view is obtained.

It frequently settled both on the Somerset and Gloucestershire banks of the Avon, and, as far as we can find out, this subspecies has not previously been definitely recorded from either county.

K. B. Rooke.
K. D. Smith.

Pomatorhine Skua in Flight.—The accompanying photograph of a Pomatorhine Skua (*Stercorarius pomarinus*) as viewed from below has been sent to us by Lt.-Com. R. R. Graham, R.N. He took the photograph in November, 1933,



off the coast of Portugal, and as it gives a good idea of the appearance of the bird when flying overhead it is reproduced here by his kind permission.

Great Tit Building Underground.—Mrs. D. E. Bucksey of Hambledon, Hampshire, writes that a Great Tit (*Parus m. newtoni*) built a nest and safely reared young in the tube of a turncock, which is some ten inches underground. Although the opening was covered with an inverted flower pot, extra protection had to be provided in case of heavy rain to prevent the nest from being flooded.

Black-tailed Godwit in S. Devon.—Mr. K. D. Smith informs us that he watched a Black-tailed Godwit (*Limosa limosa*) at Slapton Ley on August 8th, 1934. It was a bird of the year and exceedingly tame.

LETTERS.

DIFFERENCES IN THE BREEDING-HABITS OF SUSSEX AND CORNISH CORN-BUNTINGS.

To the Editors of British Birds.

Sirs,—With reference to the extremely interesting article by Lieut.-Col. and Mrs. B. H. Ryves on the breeding-habits of the Corn-Bunting as observed in north Cornwall (Vol. XXVIII., pp. 2–26) and Mr. John Walpole-Bond's detailed study of the Sussex Corn-Buntings (Vol. XXV., pp. 292–300), it may be of interest to record that from 17th to 20th of June, 1934, on Salisbury Plain, about mid-way between the two districts referred to above, I saw a considerable number of Corn-Buntings feeding young ones out of the nest. I caught several of them and found that they could fly quite well for short distances. The areas where I observed these young birds were cultivated, so that the nests must have been in the growing crops.

The first eggs in these cases must have been laid about the middle and certainly not later than the end of May. It would therefore appear probable that Wiltshire Corn-Buntings conform more closely to the Sussex birds both in regard to the commencement of nidification and the choice of nesting-sites for their first clutches than they do to Cornish birds. It would be interesting to ascertain how much further west the differences in habits became more pronounced.

But perhaps it would be misleading to attempt to draw conclusions from a few days' experience in any particular locality. D. H. Meares.

BLACKCAP IN ATLANTIC IN JUNE.

To the Editors of British Birds.

Sirs,—On the way to attend the International Ornithological Congress I observed a male Blackcap (*Sylvia atricapilla*) far away from land. It was on June 30th, 1934, at 8 p.m., at the geographical position 49° 24′ N and 13° 8′ W. There was a slight north-westerly breeze at the time. The bird was following the ship and apparently trying to come on board ; it was, however, inadvertently chased away by one of the passengers and flew away in a westerly direction. The date, which is in the middle of the breeding-season of this species, seems to be the most interesting detail of this observation.

American Museum of Natural History, Ernst Mayr.
New York.
July 28th, 1934.

[The position indicated by Dr. Mayr is over 300 miles west of Lands End.—Eds.]

MERLINS BREEDING ON DARTMOOR.

To the Editors of British Birds.

Sirs,—With reference to Mr. W. Walmesley White's note (*antea*, p. 87), I write to say that on May 16th, 1920, I flushed a female Merlin which was sitting on four eggs near Cadover Bridge. In this case the nest was on the ground among heather and other herbage. On a subsequent visit I was able to identify the bird beyond question.

To my knowledge Merlins have bred in the same district on at least one other occasion ; and a fairly long and intimate acquaintance with southern Dartmoor induces me to believe that the species is less rare there than is generally supposed. On at least a dozen occasions I have seen Merlins in keepers' galleries in woods bordering Dartmoor, and last June I was sorry to see a pair nailed up in a plantation some three miles west of Cadover. F. Howard Lancum.

ESSEX HERONRIES.

To the Editors of British Birds.

Sirs,—Mr. E. M. Nicholson's letter in the August number (*antea* p. 88) would have been passed by me without comment but for the fact that he introduces quite unnecessarily my name and that of the late Dr. J. H. Salter. As Mr. Nicholson's letter might create a false impression I feel it advisable that the matter should be reviewed. My reason for quoting the views of Dr. Salter was the intimate knowledge he had of the Old Hall Marshes, for if there had been a heronry in the reed-beds near Tollesbury these particular marshes would have been the most likely locality. It is true that I expressed dissatisfaction with the evidence adduced by Mr. Nicholson, and he was apparently satisfied with my claim for he placed this record in square brackets and he has brought forward no information to justify their removal. I have difficulty in understanding why this matter should be reopened.

In regard to the additional Essex matter which has come to light, it should not be overlooked that this county has had an important stimulus in the shape of an ornithology published in 1929, to say nothing of many useful papers which have appeared in the pages of *The Essex Naturalist*. William E. Glegg.

[Mr. Nicholson did not reopen the question of the reed-bed site, which he still agrees cannot be taken as authentic without fresh historical evidence. Dr. Salter was mentioned in connexion with the recently-recorded Rolls Farm heronry to show how even a keen observer can miss a heronry in his own neighbourhood. Essex is not by any means the only county where this has happened.—Eds.]

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CONTENTS OF NUMBER 5, VOL. XXVIII., OCTOBER 1, 1934.

PAGE
A Census of Water-Birds on the Highgate and Kenwood Ponds. By Julian S. Huxley and Alan T. Best... 122
An Attacking Tawny Owl. By W. A. Cadman 130
Movements of Ringed Birds from Abroad to the British Isles and from the British Isles Abroad. Addenda III. By H. F. Witherby and E. P. Leach 133

Notes :—

Snow-Buntings from Inland in Kent (Dr. J. M. Harrison) ... 142
Spotted Flycatchers Protecting Nestlings from Heat of Sun (S. Lewis) 142
A Chiffchaff Triangle (H. G. Hurrell) 142
Whinchats Early Nesting and Building again while Feeding Young (W. J. Eggeling) 144
Numbers and Destruction of Broods of Nightingales in Suffolk (A. Mayall) 145
Swallow Clutches and Broods (Rev. H. J. Emmet) 146
Swallow Utilizing Robin's Nest (N. F. Ticehurst) 146
Mortality amongst Nestling Lesser Spotted Woodpeckers (S. Lewis) 147
An Unrecorded Rough-legged Buzzard from Kent (Dr. J. M. Harrison) 147
Sheld-Duck Nesting in Straw Stack (Rev. H. J. Emmet) ... 148
Buff-breasted Sandpiper in Sussex (Dr. J. M. Harrison) ... 148
Extension Southward of Temminck's Stint's Breeding-range in Norway (Dr. H. L. Lövenskiold) 148
Spotted Redshanks and Temminck's Stint in Lincolnshire (Dr. J. M. Harrison) 149
Spotted Redshank in Sussex in Spring (N. F. Ticehurst) ... 150
Large Clutches of Eggs in Terns (H. W. Robinson) 150

Short Notes :—

Notice to Ringers. Young Mute Swan Diving. Shag Inland in Kent 150

Letters :—

Birds Laying while still attending Brood from Previous Clutch (D. W. Musselwhite) 151
Black-headed Gulls Nesting in Trees at Twigmoor (W. B. Alexander) 152

A CENSUS OF WATER-BIRDS ON THE HIGHGATE AND KENWOOD PONDS.

BY

JULIAN S. HUXLEY AND ALAN T. BEST.

THIS census was undertaken during the six months' period from New Year's Day to the end of June, 1934. Observations were made on the water-birds on the communicating chain of ponds in Kenwood and Highgate, on the east side of Hampstead Heath. There are in all nine bodies of water, three in Kenwood and six on the Heath, which we shall refer to as K1-3 and H1-6 respectively. K1 is a very small pool overhung by shrubbery; K2 is a good-sized pond with a large growth of yellow and white water-lilies, open to the north and bordered by the wood of Kenwood to the south. K3 is similar in situation but has less cover and fewer rushes along its banks. H1 is a smaller pond, with dense rush cover at its upper end, a path along its lower end. H2 is larger; it again has a mass of rushes at its upper end and above these is a stretch of moist grass with a stream running through it, much frequented by feeding Moorhens. At its lower end is the women's bathing-place. H3 is of about the same size, with rushes almost all round its banks; a rushy embayment leads from its south-west corner up to a stretch of moist grass with a stream. Observation is difficult on this pond. H4 is larger, is the model yachtsmen's pond, and has no cover of any description on its banks, which are everywhere accessible to the public. H5 is of about the same size, and contains the men's bathing-place. It has a path along either end, but shrubbery along the east bank and a growth of rush, iris, etc., along the west bank. H6 is again one of the larger ponds. It has no rushy cover, but the west and south and part of the east banks are overhung with trees, and the public does not have access here. On the east are two small bays with trees.

The species noted were eight in number, as follows: Mute Swan (*Cygnus olor*); Mallard (*Anas p. platyrhyncha*); Pochard (*Nyroca f. ferina*); Tufted Duck (*N. fuligula*); Coot (*Fulica a. atra*); Moorhen (*Gallinula ch. chloropus*); Black-headed Gull (*Larus r. ridibundus*); Common Gull (*L. c. canus*); Dabchick (*Podiceps r. ruficollis*). Visits were most frequently made between 8 and 9.15 a.m, but also at various other times; whenever possible all ponds were visited on any one occasion. The number of visits was 33, including 25 occasions on which all the ponds were visited. By months, the visits were as follows (number of visits comprising all ponds in brackets after the totals):—

January ...	9 (5)	April ...	2 (2)
February ...	7 (6)	May ...	4 (4)
March ...	8 (7)	June ...	4 (2)

On two occasions, one in January and one in February, the ponds on the west side of the Heath were also visited. Unavoidable absences from London reduced the number of visits after the end of March. Whenever possible both observers were present, armed with binoculars.

The number given for Swans is complete, and for the various Duck species approximately so, at any rate until April, when the herbage began to provide more cover where birds could remain unnoticed. Those for Coots are also probably almost complete, but those for Moorhens are inevitably below the actual, since it is very easy to overlook individuals of this species among the rushes, or when they stray into the shrubbery to feed: nevertheless the figures show perfectly definite trends for this species too. No attempt was made to assess the precise numbers of the Gulls.

The chief facts revealed have been the surprising amount of movement shown by all the species observed; the continued decrease of some species, such as Moorhens, during the period of observation; the small number of young produced by most species; and the changes noted in the sex-ratio of the Ducks.

It will be best to take the species in order.

1. GULLS.—Very few words will be needed here The figures given are in this case only approximate, as only estimates were made, not accurate counts.

Up to February 7th Gulls were abundant, totalling roughly from 75 or 80 up to 350 or so. In this period they averaged 200–250, except for the period January 10th to 14th inclusive, when they showed a sharp temporary decrease to below 100. From February 11th on they began to decrease, averaging below 150 in the latter part of February, and never reaching 100 after March 1st. Between March 15th and 21st the final main exodus occurred, leaving only stragglers. The last Gull, a single bird, was noted on April 8th.

The Gulls almost all belonged to the Black-headed species (*L. ridibundus*). The first note of birds with dark heads occurs on February 27th, but we may not have recorded this precisely. By March 1st many were in breeding plumage.

No Gulls were ever noted on the Kenwood ponds (K1–3), and they were always few on H1 and H2. The most favoured pond was H6. H4 was also constantly favoured, but with fewer numbers. H5 sometimes had many birds, sometimes few or none, and the same was true of H3, where, too, on the whole the numbers were lower. There was great mobility, numbers often leaving and arriving in the space of a few hours.

Common Gulls (*L. canus*) were also present, both in adult and immature plumage. They were noted sporadically: on some days none were present, on others up to 10 or 12. The last was seen on March 15th.

2. SWANS (*C. olor*).—The total of Swans was at its highest in January, reaching 19: considerable mobility was in evidence between the various ponds. On one occasion (January 14th) 9 others were noted on the five Hampstead ponds, making 28 Swans present on the Heath south of the Spaniards road. Only 3 were present on these five ponds on February 6th. In the last week of January the number on the Highgate side fell to the lower level of 12, which it kept with slight fluctuations and with some mobility between different ponds until the beginning of the fourth week in February. After a brief fall to 9, the total remained constant at 11 until the end of March, with much diminished mobility. From then on to the end of June it has oscillated between 11 and 13, with considerable mobility.

A curious feature was the small amount of territorial hostility on some of the ponds. Another was the fact that on certain ponds only a single bird took up its quarters, in spite of others harbouring more than a pair.

As regards the first point, I may cite H6. Here in early January there were 8 birds, including one in immature plumage. After the middle of the month the number dropped to 7, with one day when only 6 were present. The immature bird was still present, and continued to be so later in February when the numbers dropped to 4 (and to 2 on one occasion), and again in March, when they rose to 6. By early April the number was again 4, at which it remained until the end of June save for one occasion when it was 6. The immature bird was present until mid-May, but after this all birds noted were adults. Very little fighting or hostility was seen except on the part of one pair during March, and the result of it was merely to reduce the numbers from 6 to 4. No nest was even attempted on this pond.

As regards the second point, H1 is relevant. Here again a pair of birds was present until January 19th; then none (1 on two occasions) until March 1st; then until the end of June a single bird (which was absent on one day in April).

The birds that tried to nest were a pair on H5. They started to build a nest during March, and a bird was seen sitting on it during May; but either no eggs were laid or they were stolen. On this pond a mated pair, presumably the same throughout, was seen on every visit during the whole period, except for one occasion in early February, when only one bird was present, and one in late February, when an extra bird, apparently from H6, was present.

A pair had successfully reared a brood on H3 in 1933, but this year Swans were absent from this pond on all visits except four—one bird once in late February and a pair once in March and twice in May. On K2 a pair early took up their abode, and both showed intense territorial behaviour towards other species of birds and towards human beings. However they appear not even to have built, and changed their quarters to K3. Towards the end of June they were again on K2, but evinced no aggressiveness.

3. DUCKS.—Here the Mallard (*A. platyrhyncha*) is by far the most abundant species (59 to 221 individuals) with Tufted Duck (*N. fuligula*) next (0 to 50) and Pochard (*N. ferina*) last (0 to 14). No other species were noted. The curves for all species are irregular. The maximum for Mallard was in mid-January, that for Tufted in late March. Pochard disappeared entirely by the end of March, Tufted before mid-May (apart from stragglers later). No Tufted bred on the ponds this year, though, as usual, a number of Mallard reared young. A spell of severe weather in late January caused a simultaneous increase in all three species. After that, from February 1st to April 1st, there was a marked inverse correlation between the number of Mallard and of Tufted (the number of Pochard roughly following those of Tufted). After this the numbers of both species fell simultaneously and markedly.

The fall marked the end of the presence of the Tufted for the season (except for a few stragglers later), but was followed by a rise for the Mallards.

Throughout the period the sexes were counted separately for Tufted Duck and Pochard, and from the beginning of March for Mallard. With Tufted Duck and Pochard there was an interesting positive correlation between total number observed and high male sex-ratio up to the end of February. After this period, however, the correlation disappeared. This is shown in the following Table.

Number of birds observed on the 9 ponds at one visit	*Jan. 1–Feb. 28th*		*Mar. 1st–end of June*	
	Totals	♂♂ *per* 100 *birds*	*Totals*	♂♂ *per* 100 *birds*
0–10	6	33·3	18	55·5
11–20	68	42.6	19	52.6
21–30	88	56.8	131	54·2
31 and over	180	57·8	138	49·3

The same correlation appeared to exist in the Pochard, though here the numbers were too few to be sure. The figures to the end of February were as follows :—

Less than 10 birds seen at a visit, total, 39 ; percentage ♂♂, 27·7. More than 10 seen at a visit, total, 25 ; percentage ♂♂, 68.0. Hardly any Pochard were seen after this.

Unfortunately, as mentioned, the sexes of Mallard were not noted separately during the period up to February 28th. After this date the most noticeable feature was a rise in the male sex-ratio irrespective of numbers. This rise was slow, from March 3rd to April 8th (from an average of about 50 to one of about 53 per cent., ranging between 49 and 56 per cent. on separate days), then (after a period when no observations were made) a rise to about 70 per cent. during the first half of May (ranging from 64–75 per cent.), then a fall to about 60 per cent.

During this period from March 1st to early April there was no change in the sex-ratio with change in the number of birds present. This varied from 104 to 155 per visit, and the male percentage was identical at 51.9 for the group 100 to 130 per visit and that of 130–160 per visit. In May, as already recorded, the male sex-ratio had markedly increased ; and this change was correlated with a sharp drop in numbers, these ranging from 58 to 86 per visit during the month. In spite of the high male sex-ratio, the total number of males present at one time was reduced in May (average 47 per visit, as against 70 for March and 59 (2 visits) for April).

By mid-June a number of males were moulting into eclipse plumage, and towards the end of the month it was often impossible to be sure of the sexes.

These facts would appear to indicate (*a*) a considerable mobility of both sexes of Mallards in this region from March onwards, (*b*) a progressive departure of birds, of both sexes but first and predominantly females, which began early in March but only became marked by the middle of April. Presumably the birds were scattering to more suitable breeding grounds, and those that remained included a large proportion of non-breeding males. The state of affairs thus reached continued unchanged during May.

Comparatively few families seem to have been raised, and the mortality among these was usually severe. The maximum number of families seen on one visit was 12 (June 23rd), and the numbers of families with different number of young were as follows :—

Numbers of young per family ...	1	2	3	4	5	6
Numbers of families	2	2	1	4	2	1

4. Coots (*F. atra*).—This species shows the phenomenon of rapid rise from hardly any birds to a higher level, followed by a fall to an intermediate in the actual breeding-season. The numbers rose almost without a break from 1 in early January to 12 in mid-February. Then, until March 21st, they showed a slight and oscillating decline to 8 or 9, followed by a sudden decline to 5 or 6, at which level the population remained until

mid-May. By the end of the month the numbers had fallen once more to 3 (excluding the one brood of young birds), and finally only to this one family, of 2 adults and 5 young.

The first signs of hostility between birds was noted on January 23rd on H3. By February 3rd this same pond harboured a flock of 6, which fed and swam amicably together. This state of affairs continued for over a month, the numbers going up to 7 and 8 by the arrival of single birds during the fourth week in February. In the first week of March a pair had separated from the flock, and on March 11th one of the pair was constructing a nest. The flock, now reduced to 4, left between March 21st and 27th, leaving the pair. Young were first seen on May 11th. The family remained on H3 until June 23rd, but by June 29th had moved to H4 in spite of its bare banks.

The state of affairs on H3 was peculiar. A single bird had appeared here early in January. By January 23rd it was joined by a second, and the pair remained here until March 3rd, with the curious exception of February 21st, when no Coots were present on any of the Kenwood ponds. We were sure that this pair was intending to nest here, when on March 11th we found that they were no longer present. They did not appear again; a single bird on May 3rd and two on May 6th, like a single bird on K2 on April 5th, being undoubtedly other birds on the move. It is possible that K3 was abandoned at the approach of the nesting-season on account of its lack of suitable nesting-sites; but if so it is hard to see why the pair did not simply move over to K2, which was unoccupied by others of the species and apparently very favourable for nesting.

H2 harboured a pair on most visits from February 21st to May 3rd, often with one or two odd birds in addition. The hen was observed incubating on May 3rd, but after this the birds disappeared (a single bird noted on May 30th being presumably a straggler).

The late staking-out of territory and small amount of breeding in this area is peculiar.

5. MOORHENS (*G. chloropus*).—A surprisingly large population of Moorhens is carried by these ponds in winter, the maximum observed being over 80, an average of over 9 per pond. As one pond (H4) is unsuitable for Moorhens with its bare banks, and was never seen to harbour more than two Moorhens (once, and one bird twice), and another (K1) is extremely small and usually held only one pair (3 birds twice), the number for the more favourable ponds is nearly 12 per pond. It is, furthermore, certain that a few birds were overlooked, so that we may reasonably put the maximum present at about 90, or about 13 per favourable pond. For

the whole of January, and the first week of February (excluding one day unfavourable for observation), the total seen ranged between 71 and 82, averaging over 76.

For the next period, up to March 11th, the numbers were almost as high—64 to 79, with average of just under 72 (again excluding one day with bad visibility). Then came a distinct drop for the period to the end of the first week in April, the total keeping close at or under 70 with average 66 (excluding two days when owing to wind or other reasons many of the birds were apparently skulking in shelter). When observations were resumed in early May the numbers had fallen to between 40 and 45 (average 42.5) and a further drop was noted in late May and June to 25–35 (average just under 30). Young birds of the year are not included in these figures.

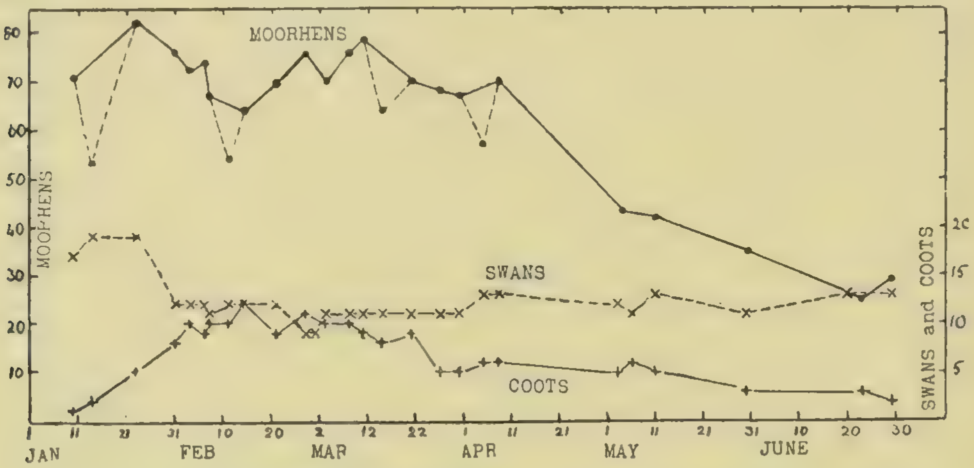


FIG. 1.—Population of Moorhens (scale on left) and of Swans and Coots (scale on right) on the Highgate and Kenwood ponds in 1934. The 4 points joined to the main Moorhen graph by dotted lines represent observations taken in unfavourable conditions, and therefore likely to be well below the actual number present.

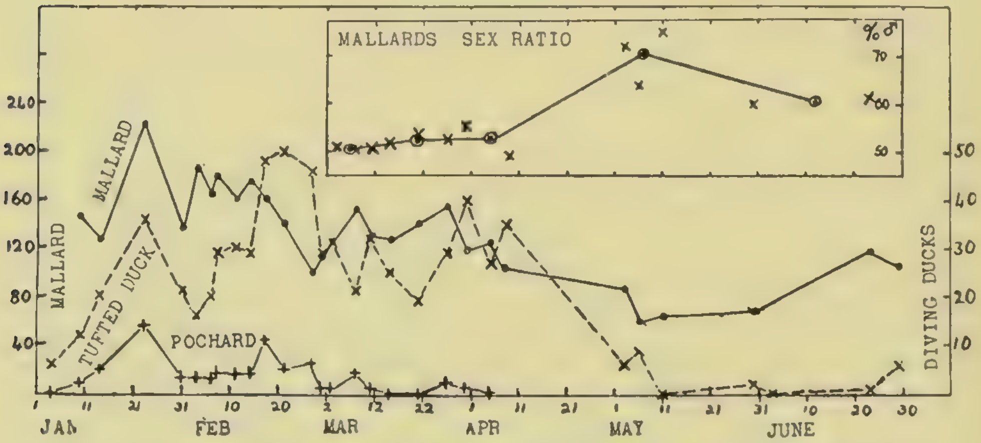


FIG. 2.—Population of Mallard (scale on left) and of Tufted Duck and Pochard (scale on right) on the Highgate and Kenwood ponds in 1934. Inset, the percentage of male birds in the Mallard population during the period March to June inclusive : ×, single observations ; ⊙ means.

On one occasion (February 6th) the five ponds on the Hampstead (south and west) side of the Heath were visited and 23 Moorhens seen, making 97 birds for the Heath south of the Spaniards road.

Among the Moorhens again, although fights were not infrequent, hostility and territorial behaviour in general seemed to be both later in onset and less in amount than in more normal environments.

The amount of nesting was also small. One nest on H6 was robbed. The total number of hatched broods noted was 5, one on each of the five highest ponds (K1–3, H1–2). The number of surviving young per brood at the end of June was three in 1 brood, two in 3 broods, one in 1 brood.

A marked peculiarity of this species appears to be its very large variation in size, some adults appearing roughly about twice the weight of others. K1 was tenanted by a "dwarf" pair, both members of which were far below normal bulk.

The most peculiar fact in regard to this species appears to us to be the progressive reduction in numbers in a series of steps, the drops occurring about February 7th, March 12th-14th, mid-April, and mid-May. The most marked drop was during April.

DABCHICK (*P. ruficollis*).—One was seen on March 31st on H3. No Herons (*Ardea c. cinerea*) or Kingfishers (*Alcedo a. ispida*) were noted during these visits, although Herons have been seen in other years, and Kingfishers reported by observers of our acquaintance.

We may conclude with some brief notes on interesting species other than water-birds noted by us on our visits. Carrion-Crows (*Corvus c. corone*) were common during most of the period. Magpies (*Pica p. pica*), Greater Spotted Woodpeckers (*Dryobates major anglicus*) and Stock-Doves (*Columba œnas*) noted in Kenwood. Redwings (*Turdus musicus*) were noted, sometimes warbling, until March 21st. A Lesser Whitethroat (*Sylvia c. curruca*) was heard singing in Kenwood on June 23rd, and another during late June and early July. Green Woodpeckers (*Picus viridis*) were occasionally noted near H5. A family of Long-tailed Tits (*Ægithalus c. roseus*) was seen on February 11th, a Coal-Tit was seen in Kenwood on April 4th, on May 3rd a Garden-Warbler (*Sylvia borin*) in song and a pair of Whinchats (*Saxicola r. rubetra*) were seen by H1 and a Sedge-Warbler (*Acrocephalus schœnobænus*) was seen and heard singing by H2.

In conclusion we would say that, while we realize that these data are very incomplete, and that it is difficult to draw many conclusions from them, they show that an organized investigation by a number of observers of the water-bird population of Central London could not fail to yield interesting results.

AN ATTACKING TAWNY OWL.

BY

W. A. CADMAN.

SOME few years ago I decided to enlarge upon the ordinary types of nesting-boxes, with which the garden was already overstocked, and to branch out on a new line. Accordingly I constructed three very large and spacious boxes, which I deemed would be quite irresistible to the pair of Tawny Owls (*Strix a. sylvatica*) which, almost nightly, hooted down my chimney ; I also made a smaller box intended for the use of Jackdaws. These with great labour I fixed in various trees about the garden.

The result of all this was that the Starling population of the garden increased by four pairs. However, in 1933, when on my round of ringing young Starlings, I found that a Tawny Owl had actually laid in one of the boxes—the smallest one intended for Jackdaws—but that one of the eggs was cracked and the bird had deserted. I removed the eggs and placed some peat moss in the bottom of the box.

This year I started my first tour of inspection in April. Much to my surprise not one of the usual Starling boxes was in use ; most had new nests in them, but these were all deserted and one had freshly-broken eggs within. As I climbed up to the Jackdaw box a fine Tawny Owl flew out, and I was pleased to find that she had laid two eggs.

I was not at home again till May 14th, when I climbed up and and ringed the two Owlets, which were about half grown and getting their feathers nicely. There was no food in the nest. The next day the old bird flew off the nest as I climbed up and I found the remains of an almost fully-fledged young Rook in the box. This was rather a surprise to me, for only the previous day a friend had accused me of harbouring an Owl which had been " throwing young Rooks out of their nests " in his rookery near by ; of course I had indignantly upheld the honour and integrity of my Owl.

I had a further surprise the next day. I had climbed about halfway up the tree when I suddenly received a thump on my right shoulder ; as I turned round I saw the old Owl gliding softly away ; the force of the blow can be judged by the fact that her claws left a clear imprint on my shoulder and that in spite of a thick jacket and pullover. That evening I climbed up again, this time in an old mackintosh ; she came for me four times, one of which was a false stoop missing me. The impact of each of the other blows was plainly audible from the ground below where a friend was watching.

Well, I refused to be bullied by a creature towards which I had shown the utmost hospitality (I was even feeding the young Owlets in order that I could keep a record of what she was bringing to the nest ; but after the first day or so she removed any surplus food as well as much of what I brought), so I decided she must be caught, severely reprimanded and ringed. Accordingly, on the following day, I wound an old length of tennis netting round my shoulders and climbed up, fondly hoping that her claws would become entangled in the net. Sure enough she came almost at once and planted her feet well and truly on the one part of my back which was not covered by the net.

During the next two days she attacked four times and three times respectively, hitting me on the back of the hand, coat collar, shoulders and back ; at the end of this time I had to admit defeat, at least so far as the tennis net was concerned.

On May 20th I constructed a kind of glorified butterfly net out of three short bamboos and some netting. Armed with this I once more ascended the tree ; the Owl came almost at once, and before I could even raise the net she had struck me a glancing blow which turned my jacket right back over my shoulder. She struck me in all five times, and each time she managed to choose the exact moment when I was unable to use the net. Her most effective coup was one to the seat of my trousers !

By this time the whole affair had become quite a personal matter between us ; I almost believe she was enjoying it all as much as I was. Anyway, as I was going away the next day, I decided to have one last attempt that evening. I managed to get myself firmly seated on a branch about halfway up the tree before she arrived ; thus I was completely ready when she came and with a cunning sweep of the net I caught her. She was quite submissive and readily allowed herself to be extricated and ringed ; I then gave her a good talking to and released her ; she shook her ruffled dignity and glided off to the Scots pine where normally she spent the day.

The following day, however, I could not resist paying one last visit to the nest, chiefly to find out what effect yesterday had had on her morale. As I climbed up to the nest I could see her on her usual bough ; presently she came as before, but at the last minute her courage failed her and she swerved off. I climbed on up to the nest-box (by this time the Owlets had come to regard me as a supernumerary parent and readily accepted Sparrows, small rats, etc., out of my fingers); while I was there the old bird came again. Usually she came on the same level as that at which I was ; on this last and final occasion, however, she came on a level a good three feet above my head and, half closing her wings, dropped feet foremost through a gap in the foliage, hitting my shoulder with a terrific impact. It was the best attack she had accomplished. As I climbed down I had to admit that after all she had undoubtedly carried away the honours.

As far as I could make out the main items of food supplied to the young were nearly fledged young Rooks, Blackbirds, Starlings and Thrushes ; on one occasion I found the fresh leg and thigh of a young Little Owl, and a neighbour accused this bird of taking half-grown chickens ; although I found no evidence to support this, an Owl had been seen to carry off a chicken in daylight near by, and an Owl which attacks human beings might be capable of anything. Most of the young Rooks brought to the nest were nearly fully grown.

MOVEMENTS OF RINGED BIRDS FROM ABROAD TO THE BRITISH ISLES AND FROM THE BRITISH ISLES ABROAD.

ADDENDA III.

BY

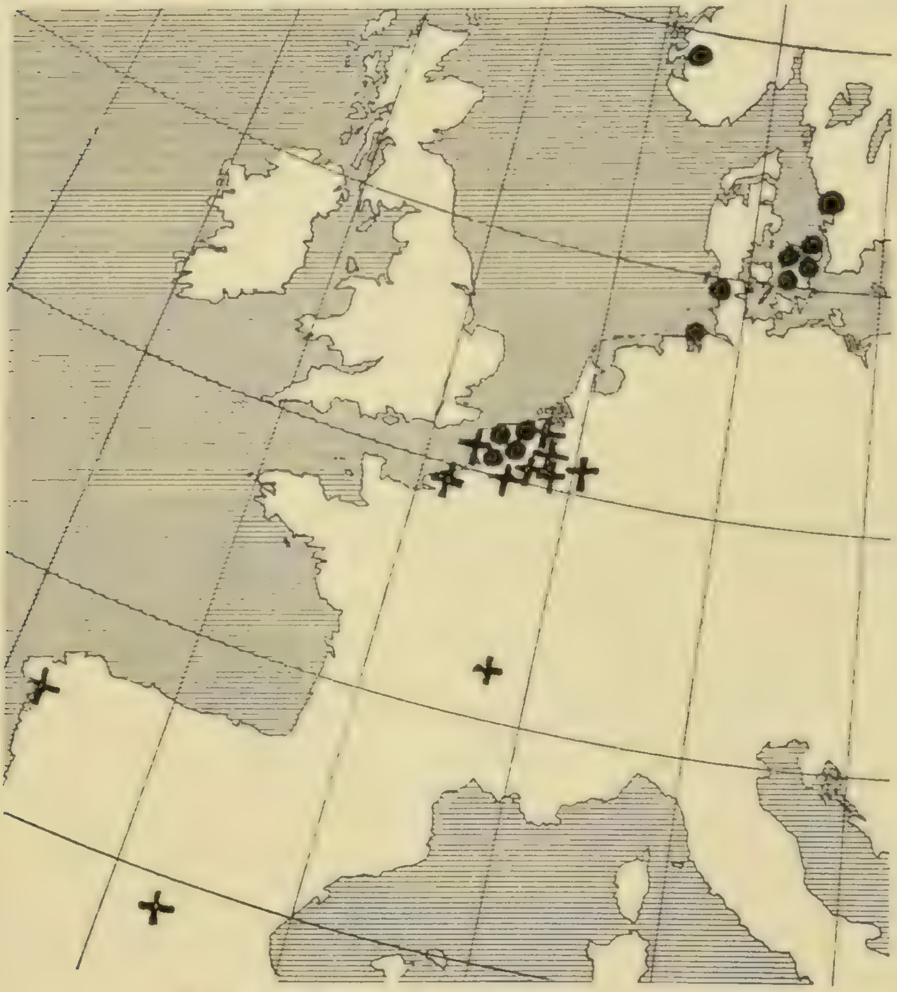
H. F. WITHERBY AND E. P. LEACH.

(*Concluded from page* 112.)

COMMON HERON (*Ardea c. cinerea*).

The list of Herons ringed abroad and visiting us contains further records of birds migrating to this country from an area to which some of our birds migrate.

The bird from central Spain is the furthest south reached by a Heron ringed in this country. The recent records of



COMMON HERON

(*Ardea c. cinerea*)

+ Recovered here. Ringed in Southern England as nestlings

● Ringed here as nestlings Recovered in Great Britain birds ringed in Kent and Sussex migrating to northern France are of considerable interest. The two from Sussex are from the same heronry (Aldershaw) as the only emigrants abroad in our previous list (Vol. XXV., p. 175). Those from Kent were ringed at High Halstow. It is remarkable that one of these and two from Aldershaw were shot at the same time at a carp pond.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Bucks.	29.4.28	Ciudad Real, Spain	16.11.33
Kent	19.5.34	Namur, Belgium	12.7.34
Ditto	19.5.34	Nord, France	17.6.34
Sussex	5.5.34	Ditto	17.6.34
Ditto	6.5.34	Ditto	17.6.34

RINGED ABROAD AS NESTLINGS.

		Ringed.		*Recovered.*	
Stav.	255	Ryfylke, Norway	25.5.33	Cork	9.2.34
B.	K858	W. Flanders, Belgium	—.6.32	Hampshire	6.9.32
V.	O596	Pas-de-Calais, France	3.5.31	Bucks.	—.3.32
V.	O891	Ditto	10.5.32	Glamorgan.	24.2.33

GREY LAG-GOOSE (*Anser anser*).

RINGED ABROAD AS YOUNG.

		Ringed.		*Recovered.*	
Rk.	2.84	Odadahraun, Iceland	25.7.33	Wexford	31.12.33

MALLARD (*Anas p. platyrhyncha*).

There are now 45 records of Mallards ringed here in winter, but all in two localities only, and recovered abroad.

RINGED GREAT BRITAIN AS ADULTS IN WINTER.

Ringed.		*Recovered.*	
Norfolk	8.3.30	Aboland, Finland	19.4.33
Wigtown	7.3.33	Baltic Coast, Poland	13.10.33
Ditto	14.3.32	Swedish Lapland	Autumn, 1932
Ditto	6.3.33	Elfsborg, Sweden	3.8.33
Norfolk	26.2.33	Östergotland, Sweden	1.9.33
Ditto	27.2.33	Ditto	—.10.33
Ditto	8.3.30	Jylland, Denmark	18.12.33
Ditto	21.2.33	Pas-de-Calais, France	3.12.33
Ditto	25.2.33	Ditto	20.11.33

RINGED ABROAD AS YOUNG.

Ld.	D10110	L. Ilmen, Novgorod, Russia	15.7.32	Cheshire	—.12.33
St.	B1237	Värmland, Sweden	17.7.30	Perthshire	19.10.33

GADWALL (*Anas strepera*).

RINGED ABROAD AS YOUNG.

		Ringed.		*Recovered.*	
Sk.	V4780	Husavik, Iceland	4.8.29	Galway	14.1.34

TEAL (*Anas c. crecca*).

The bird ringed in Cumberland and reported from N. Spain cannot be taken as a British Teal migrating south. There is, of course, no evidence as to where it was bred, but it might well have been on its way to a northern breeding ground when caught in Cumberland. It is, however, the first case of a duck ringed here and found to the south of the British Islands.

RINGED GREAT BRITAIN AS ADULTS IN WINTER.

Ringed.		*Recovered.*	
Cumberland	—.1.31	Norrbotten, Sweden	—.9.33
Ditto	20.2.32	Santander, Spain	23.12.33

RINGED ABROAD AS YOUNG.

		Ringed.		*Recovered.*	
Sk.	V4797	Husavik, Iceland	22.6.30	Yorks.	26.12.33
Rk.	5.61	Skagerfjördur, Iceland	6.8.33	Wexford	15.11.33
Rk.	5.36	Myvatn, Iceland	16.7.33	Down	15.11.33
Rk.	5.42	Ditto	10.7.33	Wexford	—.11.33

RINGED ABROAD AS ADULT, PROBABLY AT BREEDING-PLACE.

		Ringed.		*Recovered.*	
Rk.	106	Vidiker, Iceland (Caught in moult.)	24.7.32	Wexford	7.1.33
M.	E15769	Lake Ladoga, Russia (Netted.)	22.4.30	Tipperary	15.11.33

RINGED ABROAD FROM DECOYS.

		Ringed.		*Recovered.*	
Sk.	M.1329	Fanö, Denmark	12.10.31	Dumfries.	22.11.33
Sk.	M.1150	Ditto	24.9.31	Lancashire	2.1.34
Sk.	M.1429	Ditto	20.10.31	Shropshire	16.12.33
Sk.	M.2276	Ditto	22.9.31	Staffs.	24.1.33
Sk.	M.1492	Ditto	24.10.31	Lincolnshire	26.12.32
Sk.	M.1217	Ditto	1.10.31	Norfolk	—.9.33
Sk.	M.1813	Ditto	2.10.31	Suffolk	18.2.33
Sk.	M.1257	Ditto	6.10.31	Wicklow	26.2.34
L.	104030	Naardermeer, Holland	14.10.31	I. of Wight	13.1.34

WIGEON (*Anas penelope*).

RINGED ABROAD AS YOUNG.

		Ringed.		*Recovered.*	
Ra.	3767	Livonia, Latvia	2.8.29	Caithness	1.2.33
Sk.	V3565	Laxa, Iceland	14.7.27	Cheshire	13.12.33

PINTAIL (*Anas a. acuta*).

This is the first Pintail ringed here and found abroad.

RINGED GREAT BRITAIN AS ADULT.

Ringed.		*Recovered.*	
Cumberland	1.3.33	Schleswig-Holstein, Germany	—.9.33

TUFTED DUCK (*Nyroca fuligula*).

RINGED ABROAD AS YOUNG OR IN BREEDING-SEASON.

		Ringed.		*Recovered.*	
Rk.	4.44	Myvatn, Iceland (breeding adult).	19.6.33	Westmeath	26.11.33
Sk.	V6539	Jylland, Denmark	5.7.33	Ditto	—.12.33

SCAUP-DUCK (*Nyroca m. marila*).

		Ringed.		*Recovered.*	
Sk.	V6996	Myvatn, Iceland	5.7.33	Kirkcudbright	3.3.34
Sk.	V6169	Ditto (breeding adult)	29.7.31	Antrim	9.10.33
Rk.	3.171	Ditto (breeding adult)	19.6.33	Mayo	29.12.33

CORMORANT (*Phalacrocorax c. carbo*).

Out of some 190 recoveries of Cormorants 41 have been reported from abroad, whereas only two Shags out of 135 have been found abroad and these travelled only a short distance.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Pembroke.	29.6.33	Finistère, France	5.11.33
Ditto	29.6.33	Vendée, France	30.10.33
Ditto	29.6.33	Lot-et-Garonne, France	1.1.34

GANNET (*Sula bassana*).

The bird from Cape Ghir in S.W. Morocco is the furthest south a ringed Gannet has so far been reported.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Grassholm [Pembroke.]	26.6.33	Vendée, France	—.8.33
Ditto	26.6.33	Cape Ghir, Morocco	12.11.33

RINGED GREAT BRITAIN AS ADULTS.

Grassholm	2.7.33	Atlantic, off S. Ireland	4.4.34
Ditto	21.7.33	English Channel	17.3.34

MANX SHEARWATER (*Puffinus p. puffinus*).

RINGED GREAT BRITAIN AS ADULT.

Pembroke.	1.4.33	Loire Inf., France	28.8.33

WOOD-PIGEON (*Columba p. palumbus*).

This is the first ringed British-bred Wood-Pigeon to be reported from abroad.

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Berks.	7.6.31	Sarthe, France	15.11.32

STOCK-DOVE (*Columba œnas*).

This is the first ringed British-bred Stock-Dove which has been reported from abroad.

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Worcester.	27.6.33	Landes, France	7.11.33

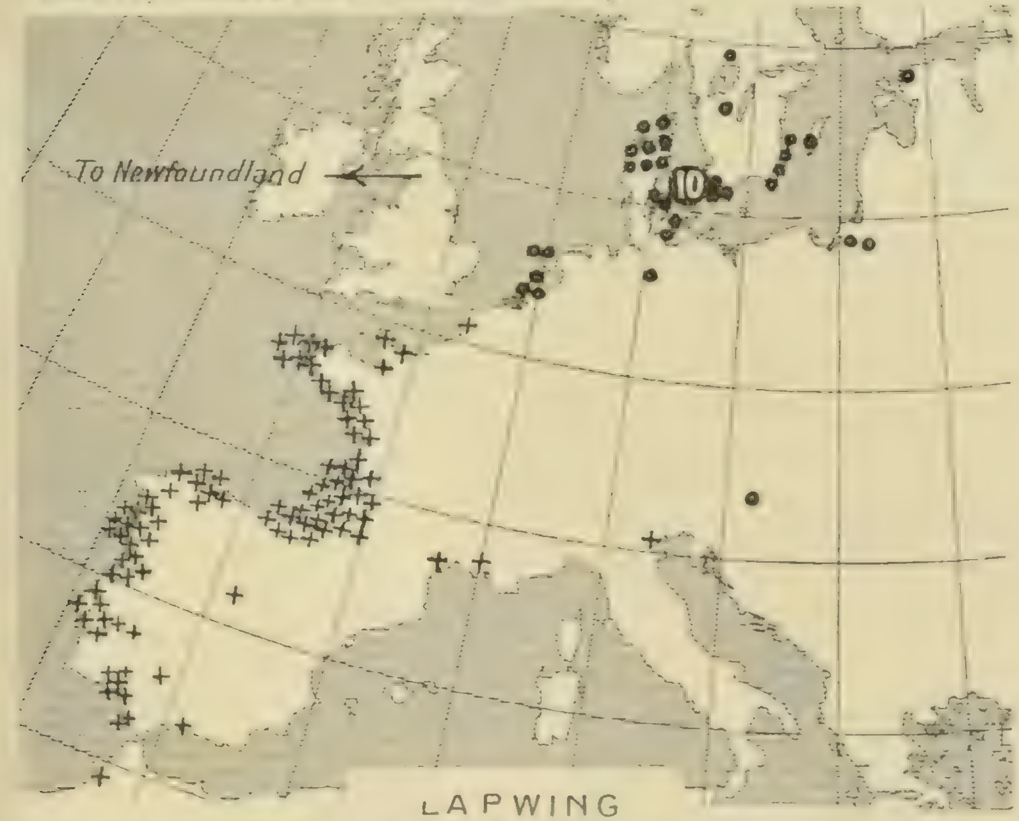
STONE-CURLEW (*Burhinus œ. œdicnemus*).

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Oxford	17.5.33	Landes, France	16.10.33

LAPWING (*Vanellus vanellus*).

Ninety-six Lapwings ringed in this country have now been recorded abroad. It will be noticed in the following list that an unusual number was reported, especially in Spain, in the winter 1933-4. This appears to have been due to weather and the migration evidently extended further south than usual, as a comparison of the map on p. 100 of Vol. XXV. with that reproduced here will immediately show.



LAPWING
(*Vanellus vanellus*)
+ *Recovered here Ringed in Great Britain as nestlings* ● ⑩ *Ringed here as nestlings or breeding Recovered in British Isles*

In this connexion Mrs. Rait Kerr wrote us from Gibraltar that there were immense numbers of Lapwings in the neighbourhood and that the birds were so tame that they could be approached within a few yards. Señor A. Gil Lletget also informs us that at Rincon, near Candeleda, on the south side of the Gredos mountains in central Spain, Lapwings were very numerous in the winter of 1933–4, and that many died and others could be caught in the hand owing to an unusually severe frost. So it is evident that the birds did not altogether escape the adverse weather by travelling south.

Mr. W. B. Alexander informed us that during the cold spell he and Mr. H. J. R. Pease motored on December 11th, 1933, from Oxford via Northampton to Norfolk and returned from there via Ely and Bedford on the 16th and failed to see any Lapwings. About the same time his brother, Mr. H. G. Alexander, saw none between Birmingham and Cambridge and the next week he saw none between Cambridge and Reigate, nor did Mr. W. B. Alexander see any between Oxford and Reigate. On the 27th Mr. W. B. Alexander motored north from Oxford and the first Lapwings seen were a few in Staffordshire, but on the following day very large flocks were encountered in southern Scotland, where there had not been the hard weather experienced in England.

In the list of those ringed abroad and recovered here the last entry of a bird from Hungary must be accounted as abnormal.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Kent	15.5.32	Somme, France	10.6.33
Angus	31.5.33	Finistère, France	9.11.33
Yorkshire	—.5.28	Ditto	11.12.33
Berkshire	23.5.31	Loire Inf., France	25.2.34
Perthshire	26.5.33	Gironde, France	1.3.34
Cumberland	—.6.32	Ditto	—.3.33
Yorkshire	—.6.31	Ditto	5.2.33
Cheshire	4.6.31	Ditto	19.12.33
Norfolk	1.6.32	Ditto	22.3.33
Somerset	2.6.29	Landes, France	8.3.34
Wiltshire	27.5.29	Basses Pyrénées, France	12.12.33
Kent	18.5.30	Ditto	15.12.33
Radnor	4.5.27	Vizcaya, Spain	17.12.33
Cheshire	10.6.26	Santander, Spain	17.12.33
Oxford	5.6.32	Ditto	24.12.33
Fife	3.5.33	Asturias, Spain	18.12.33
Lancashire	3.7.33	Ditto	—.12.33
Gloucester.	10.5.30	Lugo, Spain	23.12.33
Sussex	20.5.29	Madrid, Spain	12.2.34
Worcester.	30.4.33	Oporto, Portugal	15.12.33
Cumberland	—.6.33	Alemtejo, Portugal	29.12.33
Worcester.	31.5.33	Badajoz, Spain	—.12.33
Cumberland	—.5.33	Seville, Spain	12.1.34
Ditto	—.6.29	Huelva, Spain	23.12.33
Yorkshire	—.5.33	Ditto	23.12.33
Cheshire	26.5.33	Ditto	1.1.34
Cumberland	—.5.33	Cadiz, Spain	4.2.34
Westmorland	—.5.33	Ditto	—.2.34
Cumberland	—.5.33	Malaga, Spain	7.1.34

LAPWING (*continued*).

RINGED ABROAD AS YOUNG OR IN BREEDING-SEASON.

	Ringed.		*Recovered.*	
R. E75052	Hamburg, Germany	5.6.32	Lincolnshire	15.11.33
St. E982	Värmland, Sweden	13.6.32	Oxford	—.11.33
G. 17217C	Gotland, Sweden	25.5.33	Yorks.	—.8.33
St. A5255	Öland, Sweden	19.6.32	Dublin	22.1.34
St. D7242	Ditto	2.6.33	Westmeath	16.1.34
Sk. X1797	Sjælland, Denmark	28.5.33	Lincolnshire	15.11.33
Tarup VII. [Private]	Fyen, Denmark	18.5.33	Westmeath	27.8.33
L. 55405	Texel, Holland	7.6.27	Norfolk	4.1.32
BP. 75183	West Hungary	Spring 1933	Lincolnshire	21.8.33

REDSHANK (*Tringa t. totanus*).

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Northumberland	5.6.33	Charente Inf., France	15.10.33
Norfolk	16.5.33	Ditto	17.10.33

CURLEW (*Numenius a. arquata*).

RINGED ABROAD AS YOUNG.

	Ringed.		*Recovered.*	
G. D10151	Jamtland, Sweden	14.7.32	Berwick	28.1.33
St. A5829	Örebro, Sweden	6.7.33	Fife	2.9.33
St. B4831	Ditto	20.6.33	Galway	—.11.33
G. D13920	Öland, Sweden	24.6.31	Essex	30.1.33
St. A2930	Scania, Sweden	—.6.30	Cornwall	17.8.33

FÆROE SNIPE (*Capella g. færoeensis*).

RINGED ABROAD AS YOUNG.

	Ringed.		*Recovered.*	
Sk. T2581	Myvatn, Iceland	7.7.33	Donegal	20.10.33

WOODCOCK (*Scolopax r. rusticola*).

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Perthshire	20.4.33	Côtes-du-Nord, France	20.12.33

RINGED ABROAD AS YOUNG.

Ra. 45702	Kurland, Latvia	19.7.32	Derbyshire	16.12.33

RINGED ABROAD AS ADULT.

H. 547601	Heligoland	20.10.32	Hampshire	5.1.33

SANDWICH TERN (*Sterna s. sandvicensis*).

Attention may be drawn to some of the entries in this list representing late dates for birds so far south.

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Norfolk	19.6.33	Somme, France	18.8.33
Ditto	7.7.30	Calvados, France	—.4.34
Ditto	2.7.32	Barcelona, Spain	5.3.33
Ditto	27.6.31	Senegal, W. Africa	19.4.34

SANDWICH TERN—(*continued*).

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Norfolk	22.6.32	Senegal, W. Africa	19.4.34
Aberdeenshire	20.6.32	Gold Coast, W. Africa	16.3.33
Fife.	13.6.32	Ditto	25.10.33
Norfolk	14.6.32	Ditto	25.2.33
Ditto	30.6.32	Ditto	21.4.34
Ditto	6.6.33	Ditto	9.5.34
Ditto	8.6.33	Portuguese W. Africa	Winter 1933-34
Down	9.7.32	Ditto	—.12.32

BLACK-HEADED GULL (*Larus r. ridibundus*).

The list of birds of this species ringed abroad and recovered here now amounts to 230. No new districts are recorded below.

RINGED ABROAD AS YOUNG.

	Ringed.		*Recovered.*	
Hs. C9836	Helsingfors, Finland	8.6.30	Suffolk	8.4.32
Hs. C16197	nr. Helsingfors, Finland	4.6.33	Yorks.	26.2.34
R. E80260	Rügen, Pomerania	19.6.33	Surrey	7.12.33
G. 11131C	Västergotland, Sweden	9.6.29	Somerset	9.10.32
G. 12807C	Halland, Sweden	5.7.29	Surrey	21.12.33
G. 28289C	Öland, Sweden	27.6.33	Norfolk	20.9.33
G. 17408C	Ditto	22.6.32	Essex	17.1.33
G. 10686C	Gotland, Sweden	30.6.28	Middlesex	29.1.33
G. 11741C	Mäkläppen Is., S.W. Sweden	1.7.29	Norfolk	6.4.33
G. 26977C	Ditto	5.7.33	Ditto	15.9.33
G. 16362C	Ditto	20.6.30	Essex	—.1.33
G. 25025C	Ditto	27.6.32	London	22.3.33
G. 24439C	Ditto	20.6.32	Somerset.	28.1.33
G. 12543C	Ditto	5.7.29	Devon.	18.3.33
C. Z2741	Jylland, Denmark	12.6.33	Leicester.	6.2.34
C. Z3699	Ditto	11.6.33	Kent	2.6.34
R. E69657	Schleswig-Holstein	4.7.31	Yorks.	—.10.33
R. E70054	Ditto	4.7.31	Suffolk	30.1.34
R. E71234	Ditto	11.7.31	Essex	5.11.33
H. 565448	Ditto	8.7.33	Surrey	19.4.34
H. 560073	Ditto	22.6.33	I. of Wight	—.11.33
L. 79865	Texel, Holland	31.5.30	Gloucester.	15.3.34
H. 564414	Saxony, Germany	6.7.33	Dublin	2.10.33
L-P. 20508	North Bohemia	25.5.22	I. of Wight	20.12.33

RINGED ABROAD AS ADULT.

H. 549862	Mellum, North Sea	17.9.33	Northumb.	25.10.33

COMMON GULL (*Larus c. canus*).

Recoveries recorded in this country of Common Gulls ringed abroad now number 133.

RINGED ABROAD AS YOUNG.

T. 2864	Oesel, Estonia	23.6.27	Hants.	3.4.34
T. 3152	Ditto	1.7.27	Kent	Autumn, 1932
R. E75510	Hiddensee, Pomerania	10.6.32	Norfolk	7.2.34

COMMON GULL—(*continued*).

RINGED ABROAD AS YOUNG.

G. 17617D	Halland, Sweden	14.6.33	Yorks.	23.4.34
G. 8018D	Ditto	4.7.29	Lincolnshire	10.9.32
G. 9223D	Ditto	29.6.31	Ditto	—.10.32
G. 14309D	Ditto	3.7.32	Ditto	8.2.33
St. A5297	Ditto	5.7.31	Ditto	—.8.33
G. 3763D	Ditto	21.6.32	Suffolk	3.9.32
G. 7299D	Hallands Väderö, Sweden	5.7.29	Kent	15.3.33
G. 13121D	Tylön, Halland, Sweden	29.6.31	Cheshire	—.1.33
G. 13273D	Ditto	29.6.31	Lincolnshire	16.11.32
G. 15299D	Ditto	25.6.32	Essex	—.2.33
G. 3615D	Öland, Sweden	4.7.27	Lancashire	29.3.33
G. 12257D	Mäkläppen Is., S.W. Sweden	18.6.32	Kent	4.12.32
Sk. D12096	Jylland, Denmark	12.7.33	Hertford.	4.10.33
H. 560150	Schleswig-Holstein	22.6.33	London	17.12.33
H. 562194	Ditto	1.7.33	Sussex	29.3.34

HERRING-GULL (*Larus a. argentatus*).

RINGED ABROAD AS YOUNG.

L. 137379	Texel, Holland	19.7.33	Norfolk	11.9.33
L. 100874	Ditto	5.7.32	Suffolk	22.10.32

LESSER BLACK-BACKED GULL (*Larus f. grællsii*).

RINGED GREAT BRITAIN AS NESTLINGS.

Ringed.		*Recovered.*	
Lancashire	8.6.33	Finistère, France	—.8.33
Ditto	21.6.33	Vendée, France	5.11.33
Ditto	18.6.31	Charente Inf., France	12.3.33
Ditto	14.6.33	Lisbon, Portugal	18.5.34

GREAT BLACK-BACKED GULL (*Larus marinus*).

RINGED GREAT BRITAIN AS YOUNG.

Ringed.		*Recovered.*	
Pembroke.	19.7.33	Asturias, Spain	25.11.33

RINGED ABROAD AS YOUNG.

	Ringed.		*Recovered.*	
Hs. D6564	Nr. Petsamo, N. Finland	19.6.33	Glamorgan.	15.1.34

KITTIWAKE (*Rissa t. tridactyla*).

RINGED GREAT BRITAIN AS NESTLING.

Ringed.		*Recovered.*	
Northumberland [Farne Is.]	27.6.32	Dogger Bank, North Sea	15.12.33

RAZORBILL (*Alca torda*).

RINGED GREAT BRITAIN AS ADULT.

Ringed.		*Recovered.*	
Sutherland	29.6.32	Fyen, Denmark	1.1.34

MOOR-HEN (*Gallinula ch. chloropus*).

RINGED ABROAD AS ADULT.

	Ringed.		*Recovered.*	
L. 89872	Noord Holland	18.5.32	Hampshire	26.12.33

NOTES

SNOW-BUNTINGS FROM INLAND IN KENT.

As records of the Snow-Bunting (*Plectrophenax nivalis*) from inland districts in the south are comparatively few, the following would appear to be of interest despite the fact that one of the occurrences has remained unrecorded for over sixty years. This refers to an adult male which was shot by Mr. F. Wynne in March, 1876, below Ide Hill Church, near Sundridge. It was a single bird, and through the kindness of Mr. Wynne and his son is now in my collection. Two more were seen by the late Mr. Cross a few days before Christmas, 1928, at Woodlands, Kemsing. The identification in the case of these two birds was made by Mr. Cross, who was thoroughly familiar with the species in Norfolk, where he had lived for many years. Being in doubt at first lest a confusion had arisen between this bird and the Brambling, I showed him skins of both species, when he at once picked out the Snow-Buntings as being the birds he had seen. James M. Harrison.

SPOTTED FLYCATCHERS PROTECTING NESTLINGS FROM HEAT OF SUN.

In June, 1934, a pair of Spotted Flycatchers (*Muscicapa s. striata*) produced five young in an old tea-kettle fastened to the east wall of my house at Cheddar, this being the fourth year of their occupation of this quaint home. When the sun topped my neighbour's house its rays fell upon the kettle, the inside of which became like an oven for several hours. The nestlings were in a very distressed condition, stretching their necks over the side of the nest, and gasping, with mouths wide open.

The sense shown at such times by the adult birds was remarkable, and very interesting to watch. One would stand at the entrance on the frayed edge of the kettle, in a rather elongated position, and fan, sometimes very rapidly, with both wings, for varying periods of time. It would then fly on to the overhead electric wire, when the other bird would quickly alight in the same spot and perform a similar duty. It was obvious to me that the distress of the nestlings was owing to the suffocating heat inside the kettle, which the old birds alleviated by fanning air to them. Stanley Lewis.

A CHIFFCHAFF TRIANGLE.

The Central Park, Plymouth, is an area of grassland, scattered trees and a small valley in which there is some rough gorse and bramble. This area is a mile long and between ¼ and ½ mile wide and is effectively isolated by the wide belt of houses surrounding it. In the valley—the part most favoured by birds—there were five nesting pairs of Willow-Warblers (*Phylloscopus t. trochilus*) and one male Chiffchaff (*Ph. c. collybita*) in 1934. Between April 9th and April 28th the song of the male Chiffchaff was heard on fourteen different days, nearly always in the middle part of the valley. On April 29th, 30th, May 1st, 2nd, 3rd, he was stationed farther up the valley, where he was seen with a hen Chiffchaff. This hen began building a nest there on May 2nd, laying her first egg on May 8th and completing the clutch of five by May 12th, but I never found her incubating and the eggs remained cold and deserted. Meanwhile, on May 4th, two days after the nest was begun, the male was ranging quite a quarter of a mile up and down the valley and after that date he was usually in the lower part of the valley. It is strange that just as this clutch was being completed and for three consecutive days from May 14th he seems to have established himself so far away. From May 26th onwards for the whole of the remainder of the nesting season he was very constant in occupying the middle part of the valley where he had first appeared. It was in this middle part that on June 2nd, a month after the commencement of the first nest, I was astonished to find that the male was helping a female to feed young ones in a nest 180 yards from the first and further down the valley. These young birds left the nest fully fledged on June 4th. It was obviously impossible for the female of the deserted nest to have relaid and reared young by this date and subsequent events confirmed my belief that this could only have resulted from a second hen laying her eggs a few days before those found previously.

The Chiffchaff is certainly normally monogamous and single brooded, so it was a surprise to find that this male mated with two hens and a further surprise on June 9th to find that the unsuccessful hen was building another nest only thirty yards up-valley from the nest in which the young had been reared. This new nest had a very wide platform of leaves in front of the entrance. During the next few days the lining was added. On one occasion I saw this persevering female fiercely chased and set upon by her successful rival who temporarily left her duties of escorting and feeding her brood for this purpose. The first egg was laid in the new nest on June 13th and the other four eggs on subsequent days. On July 2nd the young hatched. This gives an incubation period of fifteen days, which is two days over the normal time. This may be accounted for by the fact that for two days after the full clutch had been laid the hen was not found sitting.

The young were successfully tended and fed by their mother (alone, as far as I saw) and were within three or four days of leaving the nest when, on July 12th, it was found to have been pulled out. Three days later I heard both hens giving the alarm note and there was another savage chase and the illfated hen again had to flee from her pursuer.

The male's song lasted a few days longer, being last heard on July 20th. He had probably never heard another male Chiffchaff throughout the whole season. I heard him on forty-seven different days and there was never more than the one bird singing. It is quite inconceivable that in the course of my regular daily visits I could have missed another male had there been one.

The rivalry of the two hens is interesting as it normally may play an important part in the maintenance of the usual pairs, for Col. Ryves remarks on the absence of this characteristic in the polygamous Corn-Bunting (*Br. B.*, Vol. XXVIII., page 21). The fact of the male leaving the territory of the first-found nest is the only explanation I can offer of the desertion of that nest. The female refused to brood while the male kept right away out of sight.

The female which rebuilt and relaid did not do so in the usual period of about five days but waited a whole month until after the rearing of the other hen's young, in which the male took part, was completed. Evidently until then the male was not free to give her sufficient attention. H. G. HURRELL.

[In the few cases of recorded evidence the male took no part in incubation or feeding the young.—F.C.R.J.]

WHINCHAT'S EARLY NESTING AND BUILDING AGAIN WHILE FEEDING YOUNG.

DURING the latter part of May, 1934, I had under observation on some moors on Snipe House Farm, near Alnwick, three pairs of Whinchats (*Saxicola r. rubetra*) of which two pairs nested exceptionally early.

On the 26th the first pair were discovered feeding young which had already left the nest and which were able to fly. These appeared at least sixteen days old.

On the 27th a second pair of fledged young of about the same age was found and an hour or so was spent watching these early next day. After both the male and female had been observed feeding the young the female was seen to fly on several occasions to one particular tuft of grass. On visiting this tuft a half-built nest was discovered and further watching through binoculars proved definitely that the female was engaged in nest building in the intervals of feeding the young. The male was not seen to assist her.

I had, unfortunately, to leave the district on the 29th and cannot say whether eggs were laid in this nest or not. Double brooding does, however, appear to be indicated, and it is interesting to read in the *Practical Handbook*, in reference to this: " Said by Saunders to be double brooded, but this seems very doubtful ".

With regard to the third pair located no nest was found but, from the behaviour of the birds, they seemed to have a clutch on the 20th, and food was not yet being carried on the 25th, when they were visited for the last time. W. J. EGGELING.

NUMBERS AND DESTRUCTION OF BROODS OF NIGHTINGALES IN SUFFOLK.

NIGHTINGALES (*Luscinia m. megarhyncha*) have this year (1934) been unusually abundant in east Suffolk, as in several other districts. In one area, comprising a circle of roughly one mile radius, I marked down thirty-six nests, while at least ten additional pairs were nesting in the same area, to judge by the number of singing males and the alarm notes of the birds, though I did not actually discover their nests.

The destruction of eggs and of broods of young has, however, been very marked. Out of seventy nests that I have observed this season the contents of at least twenty-five have perished.

Vermin of various sorts have been almost the sole cause of this destruction. Mice have sucked the eggs, while stoats and rats have devoured the unfledged young.

Probably the mildness of last winter is the cause of the prevalence of abnormal numbers of these pests of which the local keepers make especial complaint this year; and in several cases when the birds, having lost their first clutches or broods, have built a second nest, the contents of the latter have been similarly ravaged.

Number of Nests :—containing		Number of Eggs or Young.
1	...	6
44	...	5 (two being second nests)
17	...	4 (four ,, ,,)
1	...	2 (a second nest)

Of the above, eleven clutches of eggs and nine broods of young were destroyed by vermin, a total loss of fifty-two eggs and forty-two nestlings.

The eggs of six other nests were destroyed before the clutches were complete. A. MAYALL.

SWALLOW CLUTCHES AND BROODS.

DURING the summer of 1934 five pairs of Swallows (*Hirundo r. rustica*) nested around my house and outbuildings at Stoughton Vicarage, near Chichester, Sussex. From them the following data were obtained :—

Nest.	*Eggs : Clutch.*	*Addled or Destroyed.*	*Hatched.*	*Young : Died.*	*Fledged.*
A	5	0	5	5	0
B	5	0	5	0	5
C	5	1	4	0	4
D	5	0	5	1	4
E	3	3	0	–	–
AA	4	0	4	0	4
DD	4	1	3	0	3
7 nests	31	5	26	6	20

The first five nests (A to E) were all May nests ; nests AA and DD were the second nests of the pairs at A and D respectively, and were in July. The brood of five in nest A all died from the effects, presumably, of the intense heat in the latter half of June. The nest was close up under some slates in an outhouse, and the heat there was appalling.

Thus, for the seven nests recorded, the average clutch was 4.43, the average fledged brood 2.86. Of the total 31 eggs laid, 83.87 per cent. hatched, 64.52 per cent. became fledged young birds. HOWARD J. EMMET.

SWALLOW UTILIZING ROBIN'S NEST.

IN a carpenter's shop forming one side of the yard of a house in S.W. Kent five or six pairs of Swallows (*Hirundo r. rustica*) annually nest, most of them rearing two broods. In 1934 a Robin (*Erithacus r. melophilus*) built her first nest, and reared a brood, on the horizontal beam along the top of one of the side walls to which the rafters are fixed. She then built a second nest on the same beam in an angle made by one of the rafters, and above and just to one side of the door. Here she reared her second brood of four, which were ringed on June 24th and flew soon after. A Swallow then took possession, added a narrow rim, about a quarter of an inch high and thick, of mud and fine straws, and a plentiful lining of chicken's feathers. She laid her first egg on July 15th and her four young were ringed on August 10th. The nest is still (September 9th) being used by them for roosting.

N. F. TICEHURST.

MORTALITY AMONGST NESTLING LESSER SPOTTED WOODPECKERS.

In May, 1934, I located two nests of Lesser Spotted Woodpeckers (*Dryobates m. comminutus*) in order to photograph the fledged young at the nesting-hole, if possible. In the first nest the young hatched off, and the domestic affairs seemed to be going on successfully, when suddenly the nest was forsaken. The old birds were not seen to visit the tree, so after a few days' waiting the shaft was opened up, and the four almost fledged nestlings were found dead in the nest. They were in fine condition and very plump. After this occurrence, the other nest was visited and found to be abandoned. Here again the shaft was opened up, revealing exactly the same state of affairs, the young, also four in number, in the same condition and state of plumage, were dead in the nest. Little Owls were at first suspected of killing the adult birds, but this was proved not to be the case; the old birds were seen and heard. Plenty of water was in close proximity to both nests. In the absence of further proof there seems to be only one conclusion, namely, that these nestlings died from suffocation during the heat-wave which prevailed in the severest drought in recent history. Both nests were situated so that the sun shone upon the entrance holes for several hours each day, consequently the heat at the bottom of the shafts must have been intolerable. The nesting trees were situated six miles apart so that the mortality seems to have been general. Stanley Lewis.

AN UNRECORDED ROUGH-LEGGED BUZZARD FROM KENT.

A fine example of the Rough-legged Buzzard (*Buteo lagopus*) was obtained at a place known as Brans Hatch, East Hill, Kemsing. The bird had been seen the day previously and was secured in a trap baited with a rabbit. The existence of this specimen was first brought to my notice by the late Mr. W. Williams, who was under-keeper on the Beechy Lees Estate at the time of its capture by the then head-keeper, the late Mr. Daniells. This bird is now in the possession of Mr. Daniells's son at Offam, near Wrotham, where I have been able to see it. I have gone carefully into this record and am satisfied with its authenticity ; that it was obtained in this part of Kent there can be no doubt, and at the end of February or early in March, and as to the year, I am assured that it was more than thirty years ago, thirty-six to thirty-eight years ago was stated to be its age, which I think means that it is even a few years older and belongs to the 1892 invasion of Rough-legged Buzzards. JAMES M. HARRISON.

SHELD-DUCK NESTING IN STRAW STACK.

THE nest of a Sheld-Duck (*Tadorna tadorna*) which was built in the side of a stack of threshed straw was reported to me this May by Mrs. Christy, of Lordington, near Chichester, Sussex. There were nine eggs, but, unfortunately, the bird was killed on her nest by a stoat or rat. Later, I was able to visit the nest myself and found that it was built on the ground-level and about one foot into the side of the stack.

It was approached by a tunnel from opposite ways which ran along in the loose straw at the side of the stack, and parallel to the side of the stack. The tunnel was four feet in length, with the nest in the middle, so that the duck could approach her nest from opposite sides, each tunnel from the entrance to the nest being two feet. The nest was lined in the usual way with the duck's own down.

The nearest tidal water would be at Emsworth, three miles away. HOWARD J. EMMET.

BUFF-BREASTED SANDPIPER IN SUSSEX.

ON August 21st, 1934, an example of the Buff-breasted Sandpiper (*Tryngites subruficollis*) was obtained at Rye Harbour. The bird was a single one and was feeding on one of the numerous small mud patches on the saltings. It was conspicuously sandy coloured. On dissection the bird proved to be a male. It was in fat condition and is apparently adult, as the cranial vault is evenly ossified. Identification in the flesh was confirmed by Dr. Arnold McMillan of New Romney. The specimen, which has a wing of 133.5 mm., is now in my collection. JAMES M. HARRISON.

EXTENSION SOUTHWARD OF TEMMINCK'S STINT'S BREEDING-RANGE IN NORWAY.

THE following notes on the southward extension of the range of Temminck's Stint (*Calidris temminckii*) in Norway, have a special interest in view of the recent discovery of a nest in Scotland.

On June 7th, 1934, I visited a place called Sandhoug, in the middle of the Hardanger Vidden, which is about 4,000 feet above sea-level. On my way there and during my stay I occasionally saw some small waders flying about at a great pace which I was unable to identify. On June 23rd, while crossing a bog near Sandhoug and near a small pool, I almost trod on a bird which rose from a nest with four eggs, only about a couple of inches from my foot. The bird reminded me very much of Temminck's Stint, which I had found breeding on Fokstuen, on the Dovrefjeld, some years previously. It was very shy and would not allow a close approach when sitting. Next day I found a Dunlin (*Calidris alpina*) sitting close by, and after comparing the eggs was satisfied that I had stumbled upon a most interesting discovery. By concealing myself near the nest I had a good view of the bird and saw that it was Temminck's Stint, and was able to secure a series of photographs of the sitting bird, of which one is reproduced here.

The eggs were considerably incubated, but as there seemed to be several pairs breeding here, I took the eggs, which are now in the Stavanger Museum. HERMAN L. LOVENSKIOLD.

SPOTTED REDSHANKS AND TEMMINCK'S STINT IN LINCOLNSHIRE.

A SPOTTED REDSHANK (*Tringa erythropus*) was shot at Tetney Haven on August 16th, 1934. The bird is a male in immature dress. A second example, an immature female, was shot on September 7th at North Cotes. An immature female Temminck's Stint (*Calidris temminckii*) was caught in a Plover decoy at Conisholme on September 25th, 1931. All three birds were received by me in the flesh and are now in my collection. JAMES M. HARRISON.

SPOTTED REDSHANK IN SUSSEX IN SPRING.

ON May 13th, 1934, my son, Hugh F. Ticehurst, saw a bird at the Midrips, which, from his description, cannot have been anything else than a Spotted Redshank (*Tringa erythropus*) in full summer plumage. It was wading breast deep and feeding in company with a number of Bar-tailed Godwits (*Limosa l. lapponica*). As compared with them it was slightly smaller, with a much shorter, straight bill, and jet black all over except for a white tail-patch. I was a few minutes too late to see the bird myself, but I afterwards received confirmation of its identity from Mr. H. E. Lynn-Jones who had seen it independently. N. F. TICEHURST.

LARGE CLUTCHES OF EGGS IN TERNS.

THE summer of 1934 was remarkable for the size of the clutches among the Common Terns (*Sterna h. hirundo*) nesting in a north Lancashire colony, over 90 per cent. of the early ones having clutches of three or more. Among the latter were one clutch of five and eight of four eggs. I once saw a clutch of five eggs in the Isles of Scilly (Vol. XVIII., p. 112). Possibly some of these were due to two hens laying in one nest. The later eggs, deposited on June 28th and 30th, were for the most part clutches of two.

Among the Common Terns the first young were seen on June 10th to the number of thirteen. Last year this happened about June 8th when forty-eight were counted, and in 1931, on June 6th, when there were five young.

As regards Sandwich Terns (*Sterna s. sandvicensis*) there were no clutches of three eggs here, but in the Ravenglass, Cumberland, colony there were three clutches of three each.

H. W. ROBINSON.

NOTICE TO RINGERS.—Ringers are reminded that all schedules with lists of birds they have ringed during the season should now be sent in. A special form for the list of totals ringed has already been issued to each ringer, and it is particularly requested that this form shall be used. *Separate* lists should be sent in at the same time of all birds recovered, and those who have done any considerable amount of retrapping are asked to apply for a special form for recording retrapped birds only.—H.F.W.

YOUNG MUTE SWAN DIVING.—Mr. J. C. S. Ellis informs us that while helping the keepers at Bretton Park, near Wakefield, Yorkshire, to pinion some cygnets of the Mute

Swan (*Cygnus olor*), a single bird got away from the rest and had to be pursued closely. When the keeper was in the act of netting it the bird dived and swam under the boat to re-appear some yards astern. Mr. Ellis states that under the water it swam with neck outstretched and the wings held close to the sides, only the feet being used for propulsion. It must be specially noted that this bird dived under stress when it was cornered and dead beat, and none of the others which were caught more easily attempted to dive.

SHAG INLAND IN KENT.—Dr. J. M. Harrison informs us that on August 22nd, 1933, he watched an immature Shag (*Phalacrocorax aristotelis*) on a small natural pond in a garden in Seal, near Sevenoaks. The bird was remarkably tame and allowed a close approach and actual handling, although rather inclined to use its beak! It remained for one day swimming about and diving for fish or sitting on the bank. By early next morning it had gone.

LETTERS.

BIRDS LAYING WHILE STILL ATTENDING BROOD FROM PREVIOUS CLUTCH.

To the Editors of BRITISH BIRDS.

SIRS,—Mr. R. L. Brown, in his interesting notes on the Kingfisher (*antea*, p. 83), reports a pair of birds having a clutch several days incubated when they had at the same time a brood in an adjacent nest. The experience especially interested me because two cases of the kind have come within my own observations.

The first was in Egypt of a Pallid Shrike (*Lanius excubitor elegans*) having a clutch of eggs about five days incubated when a brood from the previous clutch, which I judged had not been out of the nest more than two or three days, was being attended by the old birds. This was in semi-desert country where small clumps of suitable bushes were few, and there was certainly only the one pair in possession of the territory. The question of bigamy was dismissed as I witnessed more than once the dual task of the female. The two nests were about 15 yards apart.

The second case was a Great Tit (*Parus m. newtoni*) occupying a nest box. Before the young left, four eggs of a second clutch had been laid in the nest. Further details are recorded in Vol. XXIV., p. 75.

D. W. MUSSELWHITE.

[Although not many such cases have apparently been recorded the habit is perhaps more frequent than it appears. Mr. B. B. Osmaston noted a case in a Robin in our last number (p. 115), and an instance is referred to by Mr. W. J. Eggeling in his note on the Whinchat in the present issue. I may note here that in June 1926, Mr. N. Tracy showed me at King's Lynn a Redstart (*Phœnicurus phœnicurus*) which had laid five eggs of a second brood and was still feeding the fledged young of the first. This year (1934), at Gracious Pond Farm, Surrey, the first brood of a Pied Wagtail (*Motacilla a. yarrellii*) left the nest on June 8th and on the 16th the hen was feeding them and building a new nest alternately. She did not, in fact, finish this nest, but laid a second clutch in the old nest and had by then stopped feeding the young. At the same place some young Blackbirds (*Turdus m. merula*) left the nest on May 19th and the hen was still feeding them on the 25th when she had nearly completed a new nest, the first egg being laid on the 27th.—H. F. WITHERBY.]

BLACK-HEADED GULLS NESTING IN TREES AT TWIGMOOR.

To the Editors of BRITISH BIRDS.

SIRS,—Mr. A. W. Boyd states (*antea*, p. 117) that a nest of a Black-headed Gull built in the top of a tree "is most unusual". At the gullery on Twigmoor, Lincs., there were several nests high up in pine trees this summer (1934). Col. O. Sutton Nelthorpe, of Scawby Hall, on whose property the gullery is situated, informed me that there are some nests in one particular group of pines every year, though there are plenty of other trees equally suitable round the ponds and, of course, plenty of room on the ground. Some nests are also usually built on the roof of the boathouse and some on a bridge which connects one of the islands with the mainland.

That the habit of building in trees has persisted for at least twenty-five years at Twigmoor is evident on reference to the Rev. F. L. Blathwayt's article on "Lincolnshire Gulleries" in the *Zoologist* for 1909, for he mentions (p. 141) "some of the birds even building on the branches of fir-trees overhanging the water".

W. B. ALEXANDER.

[The Twigmoor colony was founded about 1840 (Kirkman) and was well established by 1843, as recorded by Yarrell. At that time the colony was surrounded by heath land with birch trees and dwarf shrubs. Seebohm, writing in 1885 (*Hist. Brit. Birds, III.*, p. 311), quotes W. Becher as stating that within the last fifty years the heath has been planted with larch, oak, pine and birch trees. "Last year", he says, a Gull bred on a dead birch; and "this year" a nest was built on a Scots pine, seven or eight feet from the ground. Since that date nests have been met with on trees here on many occasions. O. Grabham (*Field*, 7th June, 1902) refers to nests on trees on outskirts of colonies: Riley Fortune saw nests in "firs" during a visit described in the *Naturalist*, 1910, p. 95: cf. *Br. B., III.*, p. 379. I have myself visited the locality on three occasions, in 1912, 1913 and 1918. Each time a pair or two were breeding in trees and the keepers reported that this has usually been the case for as long as they could remember. Sometimes a nest was placed on the roof of a low shed near the water. It is clear from this evidence, and that given by Mr. Alexander, that breeding on trees has been known in this gullery for at least half a century and it was on these grounds that I wrote in the *Prac. Handbook* that the Black-headed Gull has nested exceptionally "on sheds . . . . and on low trees". With the exception of this one locality, I am not aware of any instance of tree building in the British Isles, except that recently recorded by A. W. Boyd. On the Continent, however, it is said to have bred in deserted nests of Rooks and Herons.—F. C. R. JOURDAIN.]

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CONTENTS OF NUMBER 6, VOL. XXVIII., NOVEMBER 1, 1934.

PAGE
Supplementary Notes on the Breeding-Habits of the Corn-Bunting as observed in North Cornwall in 1934. By Lt.-Col. and Mrs. B. H. Ryves 154
Some Breeding-Habits of the British Willow-Tit. By G. W. Temperley 165

Notes :—

Colour of Bill of Hebridean Twite in Nesting-season (Rev. J. M. McWilliam and A. B. Duncan) 170
Results of Ringing and Trapping Swallows in Carmarthenshire (J. F. Thomas) 170
The Food of Nestling Swallows (J. F. Thomas)... 170
Swallow Flying through Narrow Aperture (H. M. Wallis) ... 172
Late Passage of Swifts to Ireland (B. Lloyd) 172
Alpine Swifts in Pembrokeshire (Miss C. M. Acland) 174
Water-Weed in Kingfisher Castings (P. A. Clancey) 174
Avocets in Hampshire (B. J. Ringrose) 174

Short Notes :—

Hedge-Sparrow Building in Blackbird's Nest. Ospreys in Yorkshire and Huntingdonshire. Dotterels in Hampshire. Arctic Ringed Plover in Hertfordshire. Black-tailed Godwits in Cheshire and Cornwall. Little Gull in Essex. Scandinavian Lesser Black-backed Gulls in Devon ... 174

Reviews :—

The Role of Environment in the Life of Birds. By S. Charles Kendeigh 176
Sea Terns or Sea Swallows, their Habits, Language, Arrival and Departure. By G. & A. Marples 178
Habitat Selection in Birds. By David Lack 179
The Birds of Cambridgeshire. By David Lack 181

Letters :—

Birds laying while still attending Brood from previous Clutch (S. Lewis) 182
Fulmar Petrel Investigation (1934). (G. Waterston)... ... 182
The Gannet Colonies of Iceland (R. M. Lockley and H. M. Salmon) 183

SUPPLEMENTARY NOTES ON THE BREEDING-HABITS OF THE CORN-BUNTING AS OBSERVED IN NORTH CORNWALL IN 1934.

BY

LIEUT.-COL. AND MRS. B. H. RYVES.

THESE notes on the Corn-Bunting (*Emberiza c. calandra*) are the results of further observations undertaken during the breeding-season of 1934 and should be read in conjunction with the work already done and published in *British Birds*, Vol. XXVIII., pp. 2-26.

The main purport in deciding to embark on a third year's investigation was twofold :—

Firstly, to check and consolidate the conclusions already formed.

Secondly, to ascertain whether polygamy was possibly even more extensive than previous research had shown.

A feeling of doubt had been taking shape gradually. In earmarking so many as twenty-four males for close observation in 1933, had rather more been undertaken than could properly be dealt with ? In other words, had the wideness of the field resulted in obtaining only partial records ?

With this doubt in the mind, it was agreed to limit the number of observed males to fifteen. Even with this reduced number, it cannot be asserted with absolute conviction that every nest or even every hen was located. Probably eight males only would have offered a better prospect of securing complete records.

The fifteen males were chosen from the territories observed in 1933 with one exception, namely, an "isolated" bird in a territory untenanted both in 1932 and 1933.

The disposition of males was as in 1933, with the following two notable differences : (*a*) No. 2 "isolated" male's territory was shared by a second bird, and (*b*), group III. held five in place of four males.

Four of the observed males were in the "Isolated" and eleven in the "Group" categories respectively, but only a proportion of the latter were selected, the remaining birds of the groups being completely ignored.

Each of the fifteen birds was proved to be polygamous. Possibly, if not probably, some of them at least may have owned more hens than those enumerated below :—

Four males	owned definitely	2	hens each	...	8 hens.
Seven ,,	,,	3	,,	...	21 ,,
Two ,,.	,,	4	,,	...	8 ,,
Two ,,	,,	7	,,	...	14 ,,
			Total	...	51 hens.

The total of nests actually found (by observation alone) was fifty-three, and each was kept under systematic inspection. In addition, one nest evaded detection, although the hen was watched feeding nestlings and, later, on the day they quitted, two of the fledglings were found and inspected. Two other nests, although their existence had been suspected, were never located; but chicks from each were discovered which, from their appearance, had, obviously, only recently left their nests. Had these not been missed, the total of nests would have been fifty-six.

A scrutiny of the figures discloses the fact that males were polygamous to a far greater extent than the work of the two previous years had shown. Either there had been failure to establish the existence of a good many breeding hens, or hens in 1934 were actually in greater numerical strength.

Whichever it may be, the fact stands out that Corn-Buntings definitely are ordained to be polygamous and that, to this end, Nature arranges for the production of females in considerable excess of males. This excess may vary in different years.

In regard to some of the sections in the previous article, there are only a few additional points which seem to merit mention here, and page references to the previous article are given :—

Song Perches (p. 6).

The most favoured stances of two males were closer to a nest with eggs than hitherto recorded, namely, in each case, under ten yards.

Types of Nests (p. 9).

Five nests only were lined with coils of thick, black hair, covered by fine grasses. A good many contained a few feathers woven into the main fabric.

Nest Sites (p. 9).

One nest was marked down to a really vigorous field of hay and clover. It was built at the foot of thick clover where a few small thistles were also growing.

Under this heading there is one important point which only came to light this year. Whereas the majority of hens owned by one male seem to prefer nesting in close or fairly close proximity to each other, there is a type of hen which seeks complete isolation. This she secures either by distance or by some natural obstruction (as well as distance) which screens her from the owners of all other nests.

The nests of four such hens were discovered. Two of them will be dealt with under a later section. The third hen was one of four owned by one male. The nests of three of these were in the " territory proper " and fairly close to each other. This bird sought sanctuary in a separate patch of gorse about 170 yards distant, where, by the lie of the land, she was quite cut off from all other hens of her kind. She reared a brood of five, but the male took but little interest in her, and her identity was only established by seeing him (he had a cracked voice), on four occasions only, chase her back to the nest. Also, she was seen three times to leave her eggs and fly straight to the male, alighting by his side.

The fourth hen was one of two owned by a male. She spent two days in site-hunting and one in building, the male in close company and much excited on these three days. Her nest was about 220 yards from the other hen, which was feeding nestlings at the time she laid. Her clutch consisted of only two eggs and these she safely hatched and reared in solitude, for the male vanished (presumably with the other hen and her brood) when her chicks were two days old (the two youngsters left the nest on August 16th).

Males' Behaviour.

The habit of accompanying incubating hens to their meals was noticeably less regular than in the two previous seasons. No difference, however, was noted in the persistency with which males watch or chase their hens back to eggs or young.

Period of Nesting-Season (p. 7).

July again proved to be the month in which breeding activity was at its greatest height. Cessation of song and of breeding and complete evacuation of nesting territories occurred considerably earlier than previously recorded. One can only attribute this to the exceptionally early harvesting of both the hay and corn crops which afford the main sources of the birds' food supply.

In June, twenty-three clutches were laid, the earliest bird depositing her first egg on the 1st. The first eggs of the remaining twenty-two clutches were laid on dates varying between the 11th and 30th.

In July, thirty clutches were laid, the latest bird completing her set of four on the 28th.

In August, no clutches were laid.

INCUBATION (p. 12).

The dates of laying and incubation-periods were recorded at sixteen nests. Eggs, except in one case, in which a day was missed between the second and third egg (two similar records were obtained in 1933), were laid on consecutive days. The results were as follows :—

(*a*) In four nests incubation was only commenced on the day the clutch was completed (there had been no previous " brooding "). In each, the full clutches were hatched on the thirteenth morning after the laying of the last egg. *Incubation-period* 12 *days.*

(*b*) In eight nests all the eggs except one were hatched on the twelfth morning after the completion of the clutch. The (presumably) last-laid eggs were hatched on the thirteenth morning. *Incubation-period* 12 *days.*

(*c*) In one nest in which the hen " brooded " daily from the laying of the first of her five eggs, one was hatched on the thirteenth and two on the fourteenth morning after the laying of the last egg. Two eggs were addled. *Incubation-period indefinite.*

(*d*) In one nest (a clutch of five) four eggs were hatched on the thirteenth and one egg on the fourteenth morning after the laying of the last egg. *Incubation-period* 13 *days.*

(*e*) In one nest (a clutch of five) three eggs were hatched on the twelfth and one on the thirteenth morning after the laying of the last egg. One egg was addled. *Incubation-period uncertain but probably* 12 *days* (if it be assumed that the addled egg was one of the first four laid).

(*f*) In one nest (a clutch of four) three eggs were hatched on the thirteenth morning after the last egg was laid. One egg was addled. *Incubation-period* 12 *days* (if the addled egg was the last one laid which seems likely).

The above records show that the average incubation-period was much nearer 12 days than the 12½ days in 1933.

In the (*b*), (*d*), (*e*) and (*f*) nests " incubation proper " was reckoned to have been commenced on the day the last egg but one was laid. In all of them earlier eggs were " brooded " (in two, from the first egg onwards). Nests (*a*) and (*c*) require no comment.

CLUTCHES (p. 15).

The clutches laid were :—

Two eggs in 1 nest (definitely a full clutch).
Three eggs in 10 nests (one held also a Cuckoo's egg).
Four eggs in 13 nests.
Five eggs in 14 nests. Total 38 nests.

The remaining 15 nests, found with chicks, held :—

Two young in 1 nest ; also one addled egg.
Two young in 1 nest ; also two addled eggs.
Three young in 3 nests.
Three young in 1 nest ; also two addled eggs.

Four young in 6 nests.
Four young in 1 nest; also one addled egg.
Five young in 2 nests. Total 15 nests.

From the above records it will be seen that "four-egg" and "five-egg" clutches ran each other close for premier place. In 1933 "four-egg" clutches held a big majority. Clutches of six eggs in this district may be reckoned as very rare. Out of 138 nests inspected in three years, only one record of six has been secured (a nest holding six young in 1932).

MORTALITY AND REARING OF THE YOUNG (p. 16).

The results of the 53 nests were as follows:—

(*a*) In thirteen nests the chicks were destroyed (no disaster befell any nest while holding eggs). In two of these the chicks died through being deserted. In one nest the reaper killed the chicks. In another a weasel was caught red-handed; three of the nine-day-old chicks had already been disposed of, the nest being dishevelled and full of feathers and a few gory remains. The fourth youngster was lying on the edge of the nest, quite intact except for deep punctures through the skull, and still warm. The remaining nests showed no signs of violence; they were merely empty but otherwise in perfect condition. Possibly adders, which have frequently been encountered in the vicinity of nests, may account for many disasters.

(*b*) From forty nests, young safely left (in no case was a nest so recorded until a fledgling or two had been located or the hen observed to be feeding young out of nest). From these a total of 144 chicks entered upon the world. Thereafter, it was impossible to keep in touch with them.

In twenty nests the ages of the chicks on departure were recorded. In six of these they were 12 days old, in four 9 and 10 days and in the remainder 11 days. Only a few cases have been recorded of a chick remaining in the nest for a few hours or a day after the others had vacated it.

A correspondent has written that the pale green caterpillars previously alluded to (p. 18) could not be those of cabbage butterflies. Not being entomologists nothing could be said, but the fact remains that in the feeding grounds of these Buntings "white butterflies" abounded and that these butterflies themselves were often fed to the young. This year there appeared to be a comparative paucity of white butterflies and, significantly perhaps, green caterpillars were less in evidence in the beaks of the hens.

In any case, the insect diet of the young appeared to be of a more varied nature. Grasshoppers were identified on several occasions, and a hen was watched killing one by beating it against the ground much in the manner of a Song-Thrush dealing with a snail.

Males were sometimes seen to be feeding on seeds fallen to the ground. This had not been noted before. Hens have never been observed feeding themselves, and their diet during the breeding-season was not ascertained.

There is one important point to which no allusion has been made and on which we have been challenged. Although "nesting" territories are definitely defined and sacrosanct to their owners, it is quite a different matter with "feeding" territories. The latter are common property of all and sundry. Observation definitely established this fact. A good deal might be written on this subject were time and space of no moment.

It may be of interest to record observations made of a hen brooding young in inclement weather. It was truly an awful day—torrential rains driven by a south-westerly gale. Wondering how a certain nest holding four chicks, which the hen had ceased to brood by day, would be faring (particularly as it was on the weather side of a patch of low gorse), I (B.H.R.) visited it, at intervals, three times. Each time, the hen was found crouching on the rim of the nest, with her widely-fanned tail pointing towards the storm. Her wings were also open and drooped over the walls. Her body appeared to be elongated so that the bill reached the far edge. Late in the evening, when the rain had almost ceased, the nest was again visited. The chicks, though very hungry, appeared to be perfectly happy, and the cup of the nest was quite dry. Eventually, the whole brood was safely reared.

The nest which held three eggs and one of a Cuckoo was in the identical territory in which, in 1932, a hen Corn-Bunting was observed feeding a young fledged Cuckoo. The egg of the Cuckoo and two of the Bunting hatched out early on June 27th and one egg was addled. At 3 p.m. on the 29th the nest held the Cuckoo and one chick. The other chick, which was alive, and the egg had been ejected, but we replaced them. At 5 p.m. the Cuckoo had not re-ejected the contents of the nest and the outraged chick seemed quite to have recovered. Unfortunately further observation was cut short, for, on the 30th, the nest was found to be empty.

The early intelligence of Corn-Bunting chicks appears to be evidenced by the following incident: On the usual daily round of inspection we arrived at a nest known to hold three chicks, now 10 days old. One dead chick (quite recently dead) lay in it, but the other two chicks were standing on the edge, evidently about to depart.

After standing by the nest for about half a minute, one of the youngsters quietly toppled over on to its side and, with closed eyes, lay motionless. It looked as if it had expired, and we were about to pick it up to examine it when it suddenly sprang to its feet, and, uttering lusty screams, shot into the air, fluttered a few yards and dived into thick cover. The other chick instantly followed suit and hid itself in the opposite direction.

There seems to be some insidious disease which sometimes overtakes nestlings. At a nest holding five eggs, four were hatched on July 20th (one egg was addled). The chicks appeared to be perfectly fit up to the 26th, and the weather was dry and warm. On the 27th the hen was brooding (abnormally old for young to be brooded) three apparently healthy chicks and one which appeared to have just died, and this we removed. On the 28th the nest held only one chick ; evidently two more had died and been removed by the hen. This single youngster survived and quitted the nest, leaving the egg intact, on the 30th. It was seen again on the 31st.

COITION.

Reference has already been made to coition late in the season without egg-laying following (p. 26). Apparently this is not very unusual.

This year, in the latter part of July, coition was noted on several occasions, and even occurred with hens carrying grubs to recently fledged young. None of these covered hens nested subsequently.

Early in the season, coition was also observed which did not seem to be connected with egg-fertilization, for the hens did not build until about a fortnight later. For years, coition has been noted among Herring-Gulls quite considerably in advance of egg-laying.

DOUBLE-BROODING (p. 18).

After a third year's work we have come to the conclusion that the Corn-Bunting is not extensively double-brooded.

In 1933 only five records were secured where a second brood could reasonably be presumed.

This year only three such records were obtained, though there were three other more or less probable ones. But it must be admitted that the breeding-season terminated unusually early.

The majority of nests were almost certainly cases of single-brooding. A few might be categoried as "doubtful" in that they may have been second attempts after failure with first nests at an early stage—nests which were not detected.

We are convinced that the laying of a third clutch after two broods have been successfully reared would be a freak case of extreme rarity.

CESSATION OF SONG AND DEPARTURE (p. 24).

A distinct diminution of song became noticeable about July 25th. The "*tip-tip*" notes had been heard several days earlier. On the 30th only a few males sang sparingly.

On August 2nd several territories had been completely vacated. On the 3rd and 4th two or three males only sang spasmodically. By the 9th song had absolutely ceased, and birds were only to be found in a few territories. On the 18th all nesting haunts had been deserted except for short visits paid by a few stragglers for two or three days longer.

To revert to July. On the 29th a lengthy visit was paid to a group territory occupied by two males, one of which owned seven and the other three hens. Two hens only, both belonging to the "seven-hen" bird, still had nests in which young two and three days old, respectively, were being fed.

Both males were "singing themselves hoarse", crashing about everywhere in mad excitement and chasing hens and numerous young birds, which seemed equally excited. In the midst of this bewildering spectacle the two nesting hens carried on their duties unmolested, unheeded and unheeding.

On the 30th, every bird, including the two males, had vanished, not to return again. Only the two hens with nests were left to complete their tasks alone.

On August 1st one of the nests had been destroyed, but the hen of the other was carrying on and was now in complete isolation. On the 9th her four chicks left their nest, all of them being located. Late on the 10th not a trace of either the fledglings or their mother could be found.

Gatherings of a similar nature, though of fewer birds, were observed in other territories and culminated, as above described, in evacuation.

On August 2nd, at a "group" territory of five males, every bird, except one nesting hen, had already departed. This lonely hen was incubating a clutch of four eggs, completed on July 28th. In complete isolation she remained staunch, and hatched three eggs on August 8th and one on the

9th. On the 11th it was noticed that the hen was not feeding her small young. Though very hungry they seemed to be well and strong. A visit six hours later revealed that they were all dead.

Whether the utter loneliness had become too much for her and caused her to desert her chicks, or whether she had fallen a victim to some foe, can only be a matter of conjecture.

This is our only record of a male deserting an incubating hen. Desertion of hens with nestlings is almost common.

An " Isolated " Male Owning Seven Hens.

This male occupied the territory held in 1933 by " Isolated " male No. 3 (see Tables of Polygamy, p. 21). A description of our observations at this territory—a veritable mine of thrills—can hardly be omitted without loss.

The first nest (that actually of the second hen) was found on June 20th in the earliest stage of construction. On the 24th she laid the first egg of a clutch of four, three of which were hatched on July 8th and one on the 9th. The full brood left the nest on the 20th.

The second nest (that actually of the first hen) was never found, although its existence had been suspected. It must have been at least 200 yards from the other's nest on the opposite flank of the territory, and a line of tall gorse isolated the two birds. On July 19th, after an inspection of the first nest, we chanced to pull up the car at this flank, and at once spotted a hen, with a grub, drop into cover. At her next two visits she was seen to drop into different, though nearby, patches of gorse. It was now obvious that this hen was feeding fledglings, and so a search was made and one of them located. It had down on the head and could flutter only a few yards. When it rose, the hen was at once joined by the male, both birds showing great agitation. It was obvious that the brood had left their nest very recently. Reckoning the dates backwards this bird must have laid her first egg about June 23rd. Thus the two nests were contemporaneous, and it is significant that between them lay ideal nesting cover which was readily seized later by the other five hens.

On July 14th four hens were watched building at the same time (simultaneous building was observed in three other territories, two nests, in one instance, being fifteen feet apart). Each had her special hunting ground for materials, and none of them ever clashed. The male was beside himself with excitement, and seemed quite bewildered upon which of them to lavish his attentions !

On July 16th the seventh hen began building. These latter five (practically) contemporaneous nests were placed within a circle of a radius of about fifteen yards.

Clutches of 3, 5, 4, 4 and 4 respectively were laid, the first of each being deposited on July 15th, 15th, 17th, 18th and 19th respectively. Each of the five hens hatched all her eggs, with the exception of one which had a single addled egg.

On August 8th the chicks in one nest were very vociferous and ravenously hungry. On the 9th they were all dead. There can be but little doubt that the mother had met with an untimely death.

The young of the four remaining hens safely left their nests on August 10th, 10th, 11th and 13th respectively.

On August 11th and 12th many hours were spent in observation from the car, which had always been used for this territory. The scene on both days was truly amazing.

Youngsters were leaping out of cover everywhere, only to drop a little further on. The hens, carrying grubs, crossed and recrossed each other. Eight to ten full-grown, though "bibless", young birds were dashing about everywhere. Often they hovered over the various chicks, obviously marking them down. The air was filled with "*tip-tip*" notes. Some of the young birds had grubs, and gave every indication that they were feeding some of the chicks. The shifting of a chick from one bit of cover to another was the instant signal for several of them to follow and to flutter over it. At one nest the "baby" was still present. At one time, four "bibless" birds perched together on one of our "landmark sticks", two of them holding grubs. The latter dived simultaneously to the nest, remaining in it for about fifteen seconds. One nest only still held its complete brood, and in this the young birds were also keenly interested, crowding round it sometimes to such an extent that the mother had almost to push her way through them to reach her chicks.

The parent hens showed no discernible concern or annoyance over this extraordinary invasion. The male, only occasionally in evidence, showed no apparent interest in anything at all.

On the afternoon of August 14th the whole territory was as vacant of Corn-Buntings as it would be on a mid-winter day. All had vanished, including the four chicks which had only left their nest the morning before, when twelve days old.

Throughout our observations of this territory, from start to finish, never once was the male seen to help any of his hens except the one owning the first nest found. For this bird he appeared really to have some affection. From the day the latter's chicks were hatched he helped in feeding them, thus giving us our first record of a male assisting at such an early stage. His bouts of energy, of course, were never of long duration, nor were they in any way continuous. On some days, during three or four hours' watching, he was the normal idle male. Often he would alight, with a grub, at the nest and pour out several bars of full song as a preliminary to the dive into it to deliver the goods.

Unless some of these seven hens had nested previously elsewhere as the mates of another male or males—a supposition that does not bear even a passing thought—there can be little doubt that they all were examples of single-brooded birds.

* * * * *

Before laying down the pen may we—in spite of it being so obvious—stress the fact that the information this and the previous article present to ornithology could not have been secured had egg-collectors been working the district.

While fully admitting the value of the knowledge obtained through eggs in the past, that phase of usefulness is now surely past so far as this country is concerned. Indeed the wholesale taking of eggs is in direct opposition to the advance of ornithology, because it cuts short further observation under natural conditions, and in the case of the scarcer species it seriously limits the number of birds that can be so observed.

We would, therefore, take this opportunity of making an earnest appeal, and we believe it to be in the best and widest interests of ornithology, for a halt to be called in egg-collecting. All serious students cannot doubt that egg-collecting is a severe handicap to intensive work in much less explored fields of research such as incubation, rearing of the young and other events which follow the completion of the laying of the eggs. Incubation alone still offers a wide field for valuable investigation. Egg-collecting and investigation of such points cannot work together and there is no question which is the more valuable from the scientific point of view.

Finally, we would appeal to egg-collectors to reconsider their aims. We can take no special pride in our discoveries, because we realize that our " story " and many another could have been told years ago by others had their desire to add to our knowledge of the bird's life history not been overwhelmed by their keenness to possess the egg-shells.

SOME BREEDING-HABITS OF THE BRITISH WILLOW-TIT.

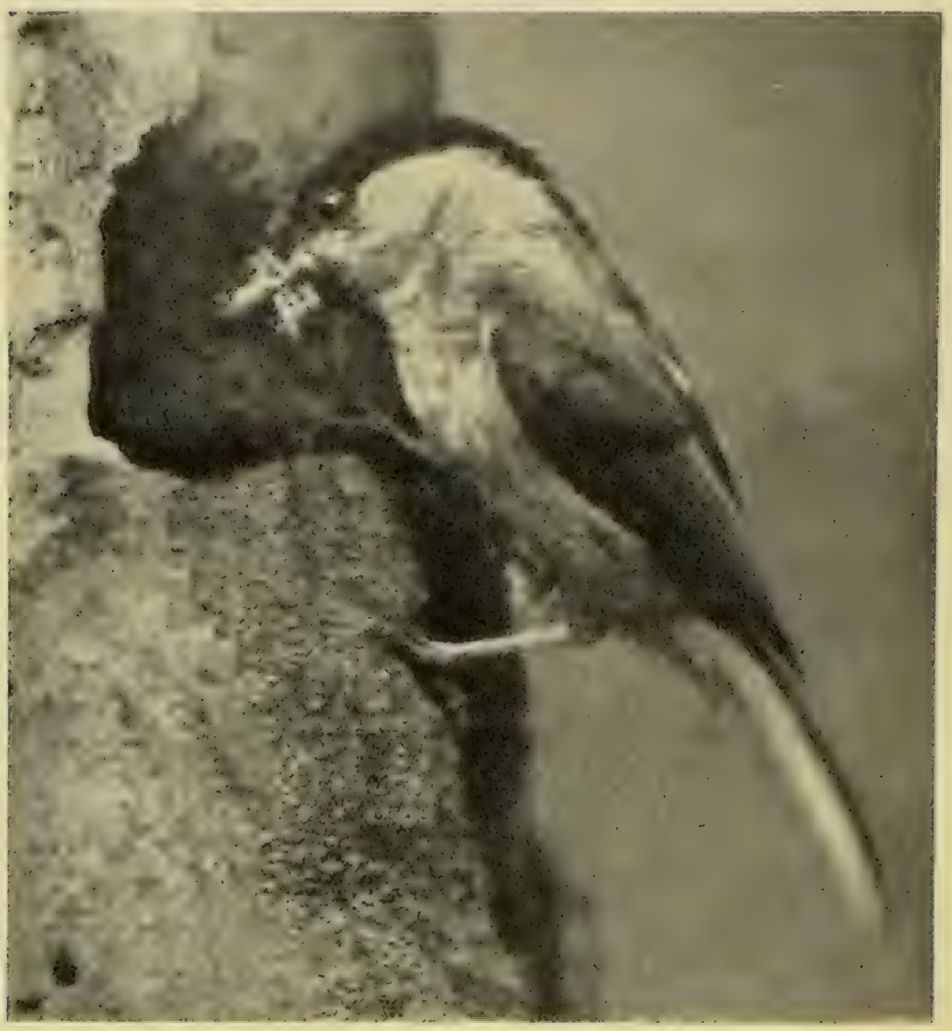
BY

GEORGE W. TEMPERLEY.

MR. H. F. WITHERBY has recently described methods by which the Willow-Tit (*Parus a. kleinschmidti*) bores its nesting-hole (*antea*, Vol. XXVII., pp. 320-324). Unfortunately the pair of birds which he had under observation deserted the site before the nesting-hole was completed ; so that he was unable to give any account of their subsequent nesting habits. The following observations on the nesting of a pair of Willow-Tits in County Durham, though unavoidably disconnected, carry the matter a little further. It is interesting to note to what extent these birds acted in the same manner as those described by Mr. Witherby.

On April 18th, 1934, I was rambling through what remains of the woodlands of Ravensworth Park, near Gateshead, on the look out for early spring migrants. Approaching a glade, usually frequented by Wood-Warblers (*Phylloscopus sibilatrix*), whose arrival was almost due, I was listening intently for their accustomed song. Suddenly the opening notes of the expected song were heard ; but the full phrase was not completed—no shivering trill followed the introductory passage. This was unusual enough to attract attention, and I entered the glade to look for the singer. No Wood-Warbler was to be seen, however, and the notes were not repeated. Sitting down upon a fallen trunk to wait, I suddenly heard, close behind me, a loud " *chur, chur, chur* ". The deep tone of the alarm note seemed distinctly unusual and it flashed into my mind that I had read somewhere that the song of a Willow-Tit was like the opening notes of that of a Wood-Warbler, and that its alarm notes were loud and deep. I slowly turned my head and there, close beside me, were two Willow-Tits uttering excited notes of alarm. There was no doubt about it. With my glass I was able to discern every feather—the dull cap, the lighter wing-patches and the pinkish-buff flanks. After watching their actions for a few minutes I felt sure that they must have a special interest in the territory in which I was sitting, but I had then no time to look for a possible nesting-hole.

Four days elapsed ; it was April 22nd before I was able to visit the wood again. As I cautiously approached the spot I saw a Tit fly away from a dead branch close to the fallen tree on which I had been sitting when I first saw them. The dead branch, six or eight inches in diameter, and very rotten, was propped up, almost vertically, against the trunk of a living thorn bush. Presently the Tit returned, flew to the dead branch and disappeared from sight. Changing my position I was able to see, in the side of the branch about four feet from the ground, a small round hole. In a few moments, out of this hole popped a Tit, bearing a morsel of some yellow substance in its bill. It flew into a neighbouring tree, but not before I had recognized it as one of my Willow-Tits. Back it came, the yellow burden gone, and re-entered the hole. In a few seconds, out it came again with another yellow mouthful, and again it disappeared into the tree. This process was continued for some time. I changed my position



Willow-Tit feeding young.
(*Photographed by* T. Russell Goddard.)

again so that I could see the bough which it visited when it left the nesting-hole. Every time it alighted thereon it put the fragment of yellow wood, for that is what it was carrying, on the branch and broke it up with its bill, so that only small sawdust-like pieces fell to the ground, where they were lost amongst low-growing shrubs. Then for a time it ceased work and disappeared. I went up to the nesting-hole to examine it. The narrow entrance turned downwards and opened out into a bottle-shaped hollow, the bottom of which I could not see ; from the look of it I judged that the work of excavation had been going on for some time and must be near completion. I did not then make any detailed examination or measurements as I was anxious that the birds should have no cause for desertion. I looked at the patch of earth immediately below the hole, which was then quite bare, and noticed that in spite of the fact that so large an amount of material had been excavated, only a tiny crumb or two of the wood had fallen to the ground. How different from the handiwork of a Woodpecker, which makes no effort to conceal its chips! At this stage the birds must have seen me, for one of them suddenly appeared upon the scene, very fussy and uttering low and hurried "*churs*". From its behaviour I concluded that this must be the cock bird, and although I have no proof of this, I will so refer to it in future. I retired to give it time to calm down, which it very soon did. It then approached to within a few inches of the hole, looked carefully round, and, being reassured, called to the hen, which immediately appeared, entered the hole at once, and resumed her labours. The cock, satisfied that all was well, soon flew off. During the time I was watching it was the hen which did all the work of excavation. After a spell of steady work she would go off, but soon reappeared. The cock only put in an appearance when the hen was disturbed or when she returned to the scene after a resting period. The two would then return together ; but the cock never entered the hole while I was watching. He contented himself with escorting the hen to within a few feet of the branch. The demeanour of the two birds was always so different that I had no difficulty in deciding which was which, in spite of the similarity of their plumage.

I could not see where the cock went when he left the nest. He rapidly became lost in the surrounding foliage ; but he cannot have been far away as he appeared immediately I disturbed the hen. I never heard any repetition of the song, but as there were now two cock Wood-Warblers in full song not far away, the Tit's notes could hardly have been detected.

I noticed that the presence of other birds—Willow-Warblers, Chaffinches and Blue-Tits—near the nesting-hole never called forth any protest from the hen. A pair of Chaffinches were building close by and constantly passed and repassed the hole, sometimes perching on the same twigs which were used by the Tits when they came and went to their hole. Except when the cock was present the hen worked in absolute silence.

It was not until May 1st, nine days later, that I was again able to visit the glade. When I reached it no birds were to be seen. I kept as still as the midges would permit, with my eyes fixed upon the hole. Nothing happened for a long time. So long, that I began to think that the nest had been deserted. Very slowly I began to approach the hole, when, suddenly the cock, which must have been on guard somewhere near, flew down towards the branch uttering a loud " *chur, chur, chur* ". I retired and, soon after, out of the hole popped the hen, and the two flew away together. In about five minutes the hen returned alone, flew directly to the mouth of the hole, where she paused to look about her before she went in. As she did not appear again I concluded that she must be sitting, and as nothing happened for a long time I withdrew.

On May 10th the hen was still sitting. In the space of an hour and a half the cock twice called the hen out and fed her on a twig near the nesting-hole. On each occasion she returned to the hole immediately after she had taken the food.

On May 13th the cock was still feeding the sitting hen. He flitted down from branch to twig until he was within two feet of the hole ; then he uttered a sharp little call and, instantly, the hen came out of the hole. She flew to the twig and with quivering wings accepted the mouthful of food. In a moment she was back in the hole and the cock flew off. In a very few moments he was back again ; but this time he alighted on the lip of the hole and I could just see the bill of the hen as she reached up to receive the food. Next time the cock fed the hen from a twig about three inches from the hole and on a fourth occasion he entered the hole himself and remained there for a moment. These four visits occupied the space of ten minutes ; but though I waited for a long time the cock did not reappear and I was obliged to leave without seeing any repetition of the feeding that day.

On May 25th, my next visit, both birds were hard at work feeding young in the nesting-hole. The young must by this time have already been well developed, for their appetites were enormous. Cock and hen were coming and going every few minutes. They took no notice whatever of me or of my camera set up within two feet of the hole ; and I could stand beside the camera, with no " hide ", with my hand upon the release, without their being in the least disturbed. They came and went in silence. Their movements were extraordinarily rapid. They alighted on the rim of the hole and popped in without a moment's pause. Their exit was even swifter—a bill appeared out of the hole followed by a blur and the bird was gone. In the half-light under the trees, now in full leaf, a rapid exposure was impossible and photography hopeless. Nevertheless my friend, Mr. T. R. Goddard, succeeding in capturing a fleeting likeness of the cock bird. Up to June 1st the feeding of the young was still being carried on. After that date I was unable to visit the spot until after the young had flown, when only an addled egg remained in the nest.

An examination of the empty nesting-hole shows that it was lined to the depth of one inch with a layer of very fine material, chiefly vegetable fibres, small fragments of moss and down from seeds, with a few rabbit hairs.

The branch was that of a sycamore, very much decayed, the centre almost " touch-wood " and the bark very loose. The hole was made just above a slight bulge in the branch ; the circumference of the branch near the entrance being 22 inches, while four inches lower it was 24½ inches. The entrance was almost circular, rather ragged at the edges, and 1½ inches in diameter.

The excavation was 9½ inches from roof to floor, thus, allowing for the nesting material, the surface of the nest was 7 inches below the lower lip of the hole. The cavity was at its widest at about the level of the surface of the nest, where it was 3¼ inches. At this point the thickness of the outer wall was reduced to 7/20 inches, of which 5/20 inches consisted of loose bark—the actual wood being only 1/10 inch from being bored through. It is interesting to compare these measurements with those recorded by Mr. Witherby.

It will be noted that I obtained no data as to the number of eggs laid or the number of young hatched. I was so anxious that the birds should not desert that I ran no risks of disturbing them. The hole was too deep for me to see to the bottom and I did not examine it with flash-light and mirror. My visits were not frequent enough to enable me to calculate the period of incubation and fledging ; but the hen was certainly sitting between May 1st and May 13th inclusive.

NOTES

COLOUR OF BILL OF HEBRIDEAN TWITE IN NESTING-SEASON.

In the *Scottish Naturalist*, 1926, p. 159, O. H. Wild and J. M. McWilliam showed that the bills of the Twites (*Carduelis flavirostris*) in Islay, in the nesting-season, were not yellow, but definitely horn-coloured, with no trace of yellow. In May and June of this year, 1934, J. M. McWilliam carefully examined the Twites nesting in South Uist, and found their bills to be horn-coloured. He watched a considerable number at close quarters and examined three in the hand, two males and one female.

Two males from South Uist (June 6th and 7th, 1934) and two females from Bute, in the Clyde (June 18th, 1934, A. B. Duncan and J. M. McWilliam), agree with a winter series (December-February, 1933-4) of four males and eight females (A. B. Duncan) from North and South Uist in all respects except in the colour of the bill, which in all the summer birds is bluish-horn and in the winter birds is clear yellow.

The summer colour of the bill seems a distinctive feature of *C. f. bensonorum*, and the fact that the colour of the bill is less bright in the breeding-season than in the winter is remarkable. The further distribution of this form remains to be worked out.

J. M. McWilliam.
Arthur B. Duncan.

RESULTS OF RINGING AND TRAPPING SWALLOWS IN CARMARTHENSHIRE.

After having caught and ringed 20 pairs of Swallows (*Hirundo r. rustica*) in August, 1933, I retrapped their sheds during August, 1934. The recoveries were exceedingly satisfactory and a great improvement on those of other years (see *Br. B.*, Vol. XXIV., p. 127; Vol. XXVI., p. 253, and Vol. XXVII., p. 202). Of the 40 birds marked last year 12 turned up again this year.

Sheds 1–5.	Not nesting in August.
Shed 6.	Not nesting in August; female 50 yards away with different mate.
Shed 7.	Not nesting in August; male 200 yards away in Shed 14.
Sheds 8–12.	Different pairs.

Shed 13.	Different male, its mate not caught; former male 1,100 yards away, its mate not caught.
Shed 14.	Female same, male different.
Sheds 15 & 16.	Males same, females different.
Shed 17.	Male same, female not caught.
Shed 18.	Female same, male not caught.
Sheds 19 & 20.	Same pairs.

Possibly the most interesting fact is that in Sheds 19 and 20 the same pairs nested two years running; similar results might have been obtained from Sheds 17 and 18.

Dr. Uchida, in his article "Studies of Swallows by the Banding Method", which appeared in *Bird Banding*, Vol. III., No. 1, January, 1932, gave evidence that in the case of the Japanese Swallow (*Hirundo r. gutturalis*), which is closely allied to ours, the birds will return to their old nesting houses, and if both of a pair are alive, they naturally nest there again; if one of a pair has disappeared, the other may either nest in the same place or be attracted by a new mate to another house. My results certainly agree with this, and, like him also, I have so far had no proof of both birds returning and pairing otherwise than as before.

I have now had a total of 40 Swallows ringed as adults and recovered breeding in a subsequent year, and of these, 30 (75 per cent.) have nested in the same sheds as before, while the remainder have been caught elsewhere; Dr. Uchida's proportion is exactly the same—93 out of 124.

In addition to the 12 recoveries mentioned in the table above, I was fortunate enough to catch two Swallows which had been ringed as nestlings; these two were breeding $1\frac{3}{4}$ miles and $4\frac{1}{4}$ miles from their original nests. J. F. THOMAS.

THE FOOD OF NESTLING SWALLOWS.

IN August, 1933, a first attempt was made to discover what kind of food was brought to nestling Swallows (*Hirundo r. rustica*), and a summary of the results was published in *Br. B.*, Vol. XXVII., p. 231. I now give below a second list of insects, obtained during August, 1934, in south Carmarthenshire; these were all taken from the beaks of adult Swallows as they were going to feed their young. The present list repeats several of the Diptera (including a horsefly) recorded in 1933, and contains also two very small beetles, a small moth and an ichneumon fly.

There does not seem to be any connexion between the size of the insect and the age of the nestling, for some of the largest flies were intended for young birds 4-6 days old.

I am greatly indebted to Miss D. Aubertin, of the Natural History Museum, S. Kensington, who has very kindly examined all the material and identified it so far as was possible.

DIPTERA.		
Bibionidæ	*Dilophus*	*febrilis* L.
Stratiomyiidæ	*Microchrysa*	*flavicornis* Mg.
	Sargus	? *cuprarius* L.
Tabanidæ	*Hæmatopota*	*italica* Mg.
Syrphidæ	*Syrphus*	? *balteatus* de G.
Calliphoridæ	*Onesia*	?
Muscidæ	*Orthellia*	*cæsarion* Mg.
Anthomyiidæ	*Hydrotæa*	*dentipes* F.
Cordyluridæ	*Scatophaga*	*stercoraria* L.
Sepsidæ	*Sepsis*	*cynipsea* L.
Sphæroceridæ	*Sphærocera*	*subsultans* Latr.
Opomyzidæ	*Opomyza*	*germinationis* L.
COLEOPTERA.		
Cryptophagidæ	*Ephistemus*	*gyrinoides* Marsh
Staphylinidæ	*Tachyporus*	*tersus* Er.
LEPIDOPTERA.		
Crambidæ	*Crambus*	?
HEMIPTERA.		
Capsidæ	*Stenodema*	*calcaratum* Fall.
HYMENOPTERA.		
Pimplidæ	*Lissonota*	*basalis* Brischke.

M. flavicornis occurred on two occasions (12 flies in all), but only one specimen each was obtained of the others, except *D. febrilis*, of which there were two. J. F. THOMAS.

SWALLOW FLYING THROUGH NARROW APERTURE.

SWALLOWS (*Hirundo r. rustica*) nesting in a small stable at Mount Stead, Ben Rhydding, Yorkshire, could gain access to it when the door was closed only by a hole below the latch. This hole measured 2¾ in. by 2 in. and through this the birds passed in flight without a check. Under these conditions, in 1933 four broods were brought off from two nests, and in 1934 two broods were successfully reared from a single nest. Miss Dorothea Steinthal, Leicester House, Burgess Hill, Sussex, who gives me the above particulars, speaks of the parent birds taking the aperture " like a flash". H. M. WALLIS.

[I have seen Swallows fly through vertical ventilating slits in a stable door about 2 in. wide, in order to reach a nest. —F.C.R.J.]

LATE PASSAGE OF SWIFTS TO IRELAND.

WHILE staying at the Tuskar Rock Lighthouse, six miles off the Wexford coast, Charles Oldham and I observed, on June 28th, 1934, what appeared to be the fag-end of a small late movement of Swifts (*Apus apus*) to Ireland. At 4 a.m., soon after light, a party of three passed the Rock ; and these were followed by a single bird at 4.15 a.m., two at 5.10 a.m., four flying low over the sea at 5.25 a.m., and four at 7 a.m. (sun-time).

All these birds were heading straight for Greenore Point, the nearest Irish land to Strumble Head on the Welsh coast. In view of our previous observations (1930 and 1931) in north Pembrokeshire, where we watched in the spring a daily coastwise passage of Swallows and Swifts—and particularly at Strumble—it is probable that these Swifts had just come from there.

While staying at Strumble Head Lighthouse on May 4th and 5th, 1930, we noticed many Swallows, some House-Martins, and a few early Swifts congregated at one spot on the adjacent mainland cliffs. Many Swallows passed the lighthouse heading almost due west or W.N.W. ; and we also saw two Swifts on this course.

Strumble Head district appears to be a regular " taking-off " place for *Hirundinidæ* and Swifts bound for Ireland. The distance thence to the Irish coast (Rosslare) is under sixty-two miles, and it seems likely that this line is recognized and used by the birds as well as by human beings as the shortest sea-route from Wales to Ireland.

As regards the date, it may be mentioned that W. Eagle Clarke in *Studies in Bird Migration* (1912) gives June 23rd as the latest " spring " migration date for the Swift, though he notes one passing Eddystone Lighthouse on June 24th. But remarkable signs of mass movements still later in the year have been noted in Hertfordshire. Though the local Swifts usually leave Tring shortly before mid-August, great numbers can sometimes be seen crossing the reservoirs there less than six weeks earlier. Thus, on June 27th, 1929, I saw hundreds passing ; and C. Oldham has recorded a big passage movement on July 2nd, 1931, from these reservoirs (*Transactions Herts. Natural History Society*, XIX., 176-7). He writes : " On June 29th and 30th, there were virtually no Swifts or Hirundines about the reservoirs, but on July 2nd at 3 p.m., with wind fresh from the W., a score of Sand-Martins and perhaps 200 Swifts at Startop's End reservoir. At Wilstone reservoir there were hundreds of Swifts and Sand-Martins and a good many House-Martins . . . it was easy to see that a movement was in progress. Birds of all three species drifted intermittently S.W. The Swifts were not all close to the water, but more or less in column form—some very high in the air . . . ." He adds that at the same place on the next day he saw little more than a score of Swifts and House-Martins altogether, and no Sand-Martins at all. BERTRAM LLOYD.

ALPINE SWIFTS IN PEMBROKESHIRE.

ON September 14th, 1934, at 5.30 p.m., at St. David's, Pembrokeshire, I saw two Alpine Swifts (*Apus melba*) flying at first at a considerable height above the cliffs. I had them under observation with field-glasses for about twenty minutes, when they descended at times to a lower level. Their larger size, though this is difficult to judge when there is no other bird near by for comparison, mouse-brown upper-parts, white throat, brown breast-band, and white breast and belly, were very apparent.

The weather was hot, sunny, with considerable haze, and a light southerly breeze. They were not seen again during a stay of several days, and the weather changed to a hard south-westerly gale. CLEMENCE M. ACLAND.

WATER-WEED IN KINGFISHER CASTINGS.

ON examining several castings of the Kingfisher (*Alcedo a. ispida*), cast up as nesting material in a nest on the White Cart, Renfrewshire, I was rather surprised to find large quantities of green water-weed mixed with the undigested fish bones.

It is quite possible that the weed was in the stomach of the fish when it was eaten, but as I have previously examined a large number of Kingfishers' castings, and never before discovered any vegetable matter, I think this is worthy of note. PHILIP A. CLANCEY.

AVOCETS IN HAMPSHIRE.

AT the end of July, 1934, I was told of a pair of birds on the saltings at Keyhaven (Milford-on-Sea) which I had no doubt, from the description, were Avocets (*Recurvirostra avosetta*). We went over on July 30th and watched the birds at close quarters for the best part of an hour. They were Avocets and, I think, undoubtedly adults. BERNARD J. RINGROSE.

HEDGE-SPARROW BUILDING IN BLACKBIRD'S NEST.—Mr. P. A. Clancey informs us that on April 21st, 1934, at Cathcart, Renfrewshire, he found in a thick hawthorn hedge the nest of a Blackbird (*Turdus m. merula*) containing four eggs. On passing, three weeks later, he found that the four eggs were missing, and built within the cup of the Blackbird's nest was one of a Hedge-Sparrow (*Prunella m. occidentalis*) containing one egg.

OSPREYS IN YORKSHIRE AND HUNTINGDONSHIRE.—We have been informed by Major E. R. Collins that he watched an Osprey (*Pandion haliætus*) on May 22nd or 23rd, 1934, in Yorkshire.

Mr. W. J. Clarke also informs us that he observed an Osprey on July 13th, 1934, not very far from St. Neots, on the border of Huntingdonshire and Bedfordshire. If any of our readers know of any Ospreys being released in this country other than those put down in Scotland some years ago by Captain Knight, we shall be glad to have details.

DOTTERELS IN HAMPSHIRE.—Mr. B. J. Ringrose informs us that his brother saw on May 6th, 1934, on a barren hill-top on the edge of the New Forest, near Gorley, a party of six Dotterels (*Charadrius morinellus*), birds which probably pass through the county regularly but are not very frequently recorded.

ARCTIC RINGED PLOVER IN HERTFORDSHIRE.—It should be recorded that a Ringed Plover shot by the late Dr. E. Hartert at Marsworth Reservoir in November, 1904, was considered by him to be an example of *Charadrius hiaticula tundræ*. This bird was in Lord Rothschild's collection, now in New York. In a letter to me in January, 1922, Dr. Hartert gave the wing measurement as 127.5 and stated that the bird was dark in colour and he had no doubt it was *tundræ*, but it was subsequently decided not to include the subspecies definitely in the list.—H.F.W.

BLACK-TAILED GODWITS IN CHESHIRE AND CORNWALL.—Mr. M. C. Wainwright informs us that he observed ten Black-tailed Godwits (*Limosa l. limosa*) on September 23rd, 1934, at Hoylake, Cheshire. He also informs us that one was shot on the Burton Marshes in the previous week.

Miss E. P. Leach has sent us a note of one she saw near Falmouth on August 11th, 1934.

LITTLE GULL IN ESSEX.—Mr. R. W. Pethen informs us that he and Mr. E. Mann watched a bird which was undoubtedly a Little Gull (*Larus minutus*) on August 18th, 1934, at Walthamstow reservoirs. Mr. Pethen sends us a detailed description of the bird, which was in immature plumage, and he notes that the flight was "tern-like", and that the bird remained on the wing, flying to and fro and making downward dives for an hour or so, and did not rest on the water or the shore as in the case of the Black-headed Gulls which were also present.

SCANDINAVIAN LESSER BLACK-BACKED GULLS IN DEVON.—Mr. K. D. Smith gives us full particulars of two of these birds (*Larus f. fuscus*) seen by him on September 6th, 1934, at Slapton. They were on the shore amongst a flock of the British race and Great Black-backed Gulls.

REVIEWS.

The Role of Environment in the Life of Birds. By S. Charles Kendeigh. Ecological Monographs, Vol. 4, No. 3, July, 1934: pp. 299-417. (Cambridge University Press). 7s. net.

Ecological Monographs is the official publication, for longer papers only, of the Ecological Society of America, and Mr. Kendeigh, who has made in this paper an outstanding contribution to our knowledge of the living bird, is already known to a number of British ornithologists on account of his series of careful studies of bird temperatures and their use in the mechanical recording of nesting activities by means of instruments which show when, and for what periods, the bird has actually been incubating. In the present paper the writer has combined a remarkably wide sweep of inquiry with a thorough and first-hand backing of detailed data. He has concentrated primarily on a single subspecies—the American Eastern House-Wren, *Troglodytes a. aedon*, Vieillot. During the thirteen seasons of 1921-33 he has carried out a field study of the House-Wren population of fifteen acres in Ohio, including the keeping of an exact census of adults and broods. He has supplemented this with a thorough study, by means of controlled experiments, of the physical limits of tolerance of the House-Wren and its power of actual survival, with or without food, under extremes of heat and cold, humidity and so forth. He has then analyzed exhaustively from meteorological and other data the actual extremes of climate which the House-Wren has to meet both in its summer and winter range, and in its migrations between the two. This he has reinforced by wide personal observation and analysis of a mass of data bearing on the food, enemies, habits and environment of the House-Wren, and of other birds. Finally, he has brought all these threads together and interpreted the bearing of the combined result upon theories of migration, territory and so forth.

This paper is so packed with material that an adequate notice seems impossible. Generally, the writer's case is that birds are responsive to climatic conditions not only indirectly through their effects on vegetation and food, but also directly. He shows that birds have limits of resistance to temperature changes and that these may actually be passed at times, even in the temperate zone. The standard body temperature for female House-Wrens is 105° F.—for the male it is a few points lower—but the daily rhythm of activity causes a drop below this level during the night, and a rise of several degrees above it during the day. Emotion, activity, food digestion and high air temperature all tend to raise the body heat, and temperate Passerine species seem to suffer serious discomfort at air temperatures exceeding 90° F., unless they keep still. If a high air temperature is accompanied by much humidity the keeping down of body heat becomes even more difficult. At the other extreme, air temperature seems to act as a critical factor mainly in conjunction with long nights and restricted opportunities for getting food. Digestion in small Passerines is so rapid that even a full stomach may be entirely digested within 2½ hours. House-Sparrows kept without food lost up to 4 per cent. or more of their weight during as short a time as two hours. Even in winter, when resistance is highest, so hardy a species as the House-Sparrow proved unable to endure for 24 hours without food an air temperature below freezing point. The writer states that House-Sparrows in America resist exposure to temperatures between 0 and 32° F. nearly 60 per cent. longer in winter than in summer, and even the migratory House-Wren has a better resistance on its arrival in spring than it has in midsummer. Yet the House-Wren's survival time without food, at 32° F., is less than ten hours, and as the winter nights within the breeding range are from twelve to fifteen hours long, a single frosty night might be sufficient to wipe out any House-Wrens attempting to winter in this area, unless, of course, they were able to find somewhere to escape from the full rigour of the temperature. They perish in such circumstances apparently not through either cold or starvation in the ordinary sense, but because of a high rate of metabolism at low air temperatures, which causes the bird to be " able during the daytime to assimilate only a part of the equivalent total energy that it loses at night ".

Mr. Kendeigh has analyzed the problem with an ability, a technique and an apparatus which, it seems safe to say, no previous ornithological worker has brought to bear upon it. He concludes that the variations of weather and climate do provide real limits of tolerance for birds, which can be measured, although measurement is handicapped partly by the tendency of individual factors either to cancel out or to supplement one another, and partly by the existence of a " zone of physiological discomfort " interposed between the optimum conditions of life for the species and the limits of its tolerance. The dynamic nature of the forces at work, and the importance of the time factor are well brought out, and many interesting suggestions emerge. For example, the writer is able to indicate the part played by shorter nights, at an adequate air temperature, in reducing the proportion of its time which a small Passerine species must spend getting food in order to maintain its own vitality, and therefore in increasing the amount of time available for foraging on behalf of a brood. Again, by drawing a series of " climographs " of the combinations of night and day air temperature, possible and actual sunshine, precipitation and wind velocity occurring at different seasons in both the breeding range (in Canada and the north-eastern United States) and the wintering range (in the Gulf States and the South), the writer is able to show where the limits of tolerance are actually approached, and how skilfully the species keeps within them by the time and place of its migrations.

Mr. Kendeigh is not under the illusion that he has found any watertight and final solution of the reasons for migration ; he is more concerned to show that migration is a highly complex affair, governed by many different factors, of which he has only been able to discuss a few, and that only in connexion with one particular case. His conclusions are generally in harmony with those of Rowan and others who have emphasized the importance of light and temperature acting through the physiological state of the bird as the stimulus for migration. At the same time, he is cautious in the picture which he draws of the relation between the daily and yearly rhythm of bird life and the periodic phenomena of migration and the moult (which he is inclined to link rather closely).

The paper is very largely the outcome of the work which has been carried on under the leadership of Dr. S. Prentiss Baldwin at the Baldwin Bird Research Laboratory at Gates Mills, Ohio. It is a triumph for the technique of collaboration between physiology and field ornithology which has there been developed, and points to large gaps in our equipment for handling certain ornithological problems in Great Britain. It is to be hoped that the stiff reading which part of Mr. Kendeigh's paper makes will not deter British ornithologists from going through it thoroughly, for whatever flaws it contains and whatever scope it may give for differences of opinion, it is certainly one of those contributions which make a firm foundation for new advances all along the line.—E.M.N.

Sea Terns or Sea Swallows, their Habits, Language, Arrival and Departure. By George Marples and Anne Marples. pp. xii., 227, 117 photos and 21 figs. (Country Life). 15s. net.

THIS is an unusual work and demands a fuller review than the ordinary series of photographs with descriptions of what the author has observed from the shelter of his hide. There is, first of all, a very complete series of photographic records of the breeding activities of all the five species of British-breeding Terns. In most cases each plate contains at least two figures, so that they are on rather a small scale, and vary somewhat in quality, though many are quite excellent. The authors have visited most of the breeding places in the British Isles and have not been content to spend a few days in the middle of the breeding-season in a colony, but have watched and recorded the whole procedure from the first arrival to the departure of old and young. Full and careful notes are given on such subjects as courtship, nesting, incubation, the rearing of the young and the vocabulary of the various species, and these are supplemented by workmanlike drawings and diagrams to illustrate tracks, colour patterns of the downy young, migration records, etc. Some of the photographic and diagrammatic records illustrating courtship, as shown by tracks, are of very great interest, and the first-hand observations which form a great part of the book are not given in needless detail and have very real value.

Having accumulated this material on their round of the British Terneries, the authors have taken the rather ambitious step of producing a monograph on all the Terns which have occurred in the British Isles, but those species which do not breed with us are only treated from the point of view of visitors. Lists have been compiled of their occurrences, and their distinguishing characters are shown in figures.

This part of the work is less satisfactory. Nomenclature is a particularly thorny subject, and to write critical notes on it requires expert knowledge. In this case the notes add nothing to the value of the book and contain many inaccuracies. Thus, of the Sandwich Tern it is said that "Gmelin, who had already in 1788 named it *S. africana*, changed it in 1789 to *S. cantiaca*". Both Gmelin's names occur in the same part of the *Systema*, on consecutive pages: *S. africana* was applied to a young bird from Africa, which Gmelin then believed to be a distinct species. For the Common Tern, Naumann's name *fluviatilis* was not given in 1847, but in 1819, on page 1847. The Caspian Tern was, according to Mr. Marples, called "*Sterna Tschegrava*, from a naturalist of that name", by Lepechin! There was, of course, no one so called: Lepechin merely combined the Latin generic name *Sterna* with the Russian colloquial name for the Caspian Tern. Of this species Mr. Marples also writes: "Harting repeated the mistake in *Handbook of*

Birds of Kent and in the *Victoria County History of Kent* ". Harting was the author of a *Handbook of British Birds*, but never wrote any work whatever on the Birds of Kent.

The old and now discredited record of the Lesser Sooty Tern in 1875 is printed twice over (p. 23), but the accepted record by Mr. Mannering in 1932 is ignored. Many similar instances could be quoted, but the value of the book does not lie in these paragraphs, which would have been better omitted.

To return to the stories of the British Terneries. One point which the authors have failed to grasp is, that the statements of the older writers must be read in the light of the knowledge which we now possess. What possible value can the statements of Thompson and Seebohm have on the question as to whether the Roseate Tern lays three eggs or not? Thompson admits that the nests with three eggs which he saw were not identified in any way. Seebohm had no personal acquaintance whatever with the Roseate Tern. Elwes's casual statement in the *Ibis* for 1869, that the Common Tern is " also common " in the Outer Hebrides, based on sight records only, before the days of prismatics, can well be ignored. In the history of the Norfolk Terneries it is strange that the great colony at Wells, which formerly extended for nearly two miles along the sandhills, is not mentioned. On p. 206 it is stated that the Norfolk colonies of Common Terns are " firmly rooted and not prone to desertion ", yet this colony has completely disappeared within the last fifteen years. We notice that the authors seem to think it possible that the Norfolk Sandwich Terns are the dispossessed Romney Marsh birds! It would be interesting to know how these birds spent the half century which elapsed between the abandonment of Romney Marsh and the establishment of the Norfolk Terneries.

On page 212 a diagram is given which purports to show the " longitudinal " [*sic*] distribution of the nesting areas of the British Terns. This is very inaccurate and requires considerable alteration. Thus the range of the Roseate Tern is (roughly) shown as extending from 27° N. to 57° N.Lat. It has recently been recorded as breeding on an island off Cape Province, near Cape Agulhas, and has long been known to nest near Zanzibar! The southern limit of the Caspian Tern is placed at about 35° N., but Australia and New Zealand lie within the breeding range of the species. (We presume by " longitudinal " the authors mean " latitudinal ", as the figures bear no reference to longitude). The book contains so much really good and valuable matter that it is a pity that such slips should have been allowed to appear in print. What the authors tell us from their own experience is generally excellent, but the compilations are far below the standard of the rest of the book. With a hundred years of ornithological study behind us, we expect a high standard of accuracy in present-day work, and in this part of the work it is lacking. F. C. R. JOURDAIN.

Habitat Selection in Birds. By David Lack, B.A. Journ. of Animal Ecology. Vol. 2, pp. 239-262.

BIRD distribution is determined in all probability by a considerable number of factors of which our present techniques are only adequate to measure a handful. Further, these techniques are mostly of recent development, have been mastered only imperfectly by a small number of human beings, and, owing to the limits of time and energy, have been applied only to an insignificant number of individual birds belonging to a few species and studied in a few small areas which do not form a very impressive proportion of the surface of the globe. Limited as the available data are, they are scattered in hundreds of books and periodicals printed in several languages and the task of digesting and interpreting them is seriously in arrears. In these circumstances all that we can hope to do is by degrees to measure new factors in more and more different cases, to bring them into relation with the factors we already know something about, and so steadily to build up a truer and more balanced picture of the forces at work in bird life.

It is difficult to avoid feeling that if Mr. Lack had written his paper more in this spirit and less as a heavy broadside against adversaries whose existence is doubtful, it would be better able to stand the test of time. Compare, for instance, this paper with the chapter entitled " An approach to a mind story " in Mr. Eliot Howard's *Introduction to the Study of Bird Behaviour*. Here Howard says that " The edifice of territory is reared upon three things—song, hostility, and behaviour within an area ". He describes, in a masterly manner, the actual behaviour of a Tree-Pipit and of other individual birds at the moment of choosing a territory, and the emphasis which he lays upon the psychological factor is greater than that which he allows to any other. Yet Howard does not let himself forget that other things come into the picture too, while Mr. Lack goes to the length of protracted speculation on the possible part of habitat selection in the evolution of, for example, the Tree- and Meadow-Pipits as separate species without thinking it necessary to pay any attention to the fact that one is exclusively a summer resident in England, while the other is common all through the year.

Mr. Lack states that the object of his paper is " to show the importance of the psychological factor in limiting bird distribution ". In case there should be any mistake about it he has stated his argument in such a way that fully to accept it would apparently involve believing that no other factor in bird distribution is of any appreciable importance compared with psychology. The justification for this enormous emphasis on psychology is apparently supposed to be that psychology has been " usually ignored, in bird distribution ". No doubt there will always be differences of opinion on the weight to be attached to each of a number of factors, but it is difficult to understand why the writer should find it necessary to overstate his case with such engaging recklessness. The valuable and suggestive field study of bird population in a newly afforested area of East Anglia, which he has carried out in 1931 and 1933, is reduced to little more than a text on which the argument can be based.

Perhaps the greatest weakness in the argument is the failure to consider alternative interpretations of the lag in abandoning old sites and in colonizing new ones. If a species appears to persist in not colonizing all the types of habitat in which it might flourish, the explanation must (according to the writer) be the psychological factor ; if, on the other hand, it begins to colonize new habitats, and is successful, this, again, " affords the best evidence that a bird's restriction to its habitat is psychological ". It is interesting to observe that this argument leads Mr. Lack to postulate that—" In spring, when birds take up their breeding quarters, they normally appear straight away in the typical habitat. Had there been no habitat selection, one would have expected them to attempt to breed in other habitats ". And that, surely, is what they actually do. Sometimes, like the Moorhens and Wood-Pigeons which have colonized Inner London in the past fifty years, or the Oyster-Catchers breeding inland in Scotland, they make good in an unusual habitat. More often, like all the non-breeding birds or outliers which fail to attract a mate, or to rear a brood, they do not make good. Some of them give up in time, to move on after a day or two in an unsuitable place, others move on late, but still in time to breed, some persist in a hopeless site and never bring off a brood.

Mr. Lack has done a useful piece of work in stimulating further analysis, of which we cannot have too much. It is interesting to see from a footnote on page 255 that already by the time his paper went to press he was moving towards a more tenable position, and there is reason to hope that this paper will prove simply to have been a *ballon d'essai* sent up in advance of a more permanent and balanced contribution to the study of bird distribution. A corrective to the views of one generation may well be supplied by the next, and Mr. Lack has certainly the capacity to help us towards the revaluation of the territory theory which we need now, and will need again, before anything like finality can be in sight. E.M.N.

The Birds of Cambridgeshire. By David Lack, M.B.O.U. (Cambridge Bird Club). 7s. 6d. net.

THE *Birds of Cambridgeshire*, which has been compiled by Mr. David Lack for, and with the active co-operation of the members of, the Cambridge Bird Club, is a welcome addition to the list of county avifaunas, in that it fills to a considerable extent a gap in their ranks that has existed far too long.

It would have been perhaps more accurate had it been called a Handbook of the county's birds, for it is a small book of only 118 pages and the detailed status of the 256 forms dealt with occupies only 64 of them. It hardly makes any pretence therefore at giving a detailed history of each species. The work, however, has been carefully done and condensation so studied that there is hardly a superfluous word in the book and certainly no superfluous matter. In this respect it is to be hoped that it is merely a stop-gap to serve as an instalment of something larger and more compendious. There must be many still untapped sources of information in respect of the past history of many species that further research will reveal.

As a handbook to the present status of the avifauna it is authoritative, though no doubt changes will have to be made here and there in the future as the result of further observations, particularly in the details of migration as it affects the Passeres and in the detection of the presence of Continental forms as migrants. The establishment of the Sewage Farm on the outskirts of Cambridge has clearly been of vast advantage in settling the status and movements of several of the other Orders.

Coming down to details it is a little surprising that only a single record of the Mealy Redpoll can be found and that just on a century old ! To our knowledge one or two used to be caught in most winters in the " nineties " by the Cambridge bird-catchers and locally caught examples were always to be seen at the shows of the local fanciers. Certainly then it was almost, if not quite, an annual winter visitor in small numbers. The account of the Tree-Sparrow is hardly adequate, and is so worded as to lead the uninformed reader to suppose that it is mainly (if not entirely) a winter visitor. The road St. Neots—Cambridge—Newmarket is given as a line south of which it is a scarce bird. Though possibly true at the present time, though we doubt it, this ignores the real abundance of the bird along the upper Cam. Here, at any rate thirty years ago, it was even commoner than in most other localities to the north. It is curious to read the account of the Nightingale without finding any mention of the Trumpington Road as a famous (? former) haunt. Perchance "ribbon development" has now banished this once abundant species from this area. Certainly at one time there must have been more Nightingales to the mile there, than along any other road in England.

The inclusion of the Pelican within square brackets is justified, since there is no proof that it was ever an inhabitant of the county within historic times, but we cannot agree to putting the Grey Lag-Goose and Crane into the same category. There cannot be any doubt that both inhabited the Cambridgeshire fens up to within the last two or three centuries, and in the case of the Goose up to 1773, and material for a more detailed history of both no doubt awaits the searcher. The ground for the square brackets in their cases appears to be because there have been no records of them in the county since the arbitrarily chosen date of 1800. Quite why this date was chosen is not apparent and the misuse of square brackets, whose significance in ornithology is now well recognized, is unjustified.

We note that the heading to the Lesser Black-backed Gull is given without qualification as to which race is intended, though the scientific name of the British race follows. It is stated to be a regular spring and autumn migrant, but no reference to races is made in the text. Are we to conclude that all hitherto seen have belonged to the British race? Or are all the records doubtful? This seems to be a point requiring further observation and elucidation.

It will be seen that there are really but few points for serious criticism in the present small book, but we must emphasize the hope that it is but a stepping-stone to something bigger.—N.F.T.

LETTERS.

BIRDS LAYING WHILE STILL ATTENDING BROOD FROM PREVIOUS CLUTCH.

To the Editors of BRITISH BIRDS.

SIRS,—In connection with Mr. Musselwhite's letter and the Editor's remarks under this heading (*antea*, p. 151), I may record that a Blackbird (*Turdus m. merula*) hatched four young in 1934 in a nest on a branch of a cedar on my lawn at Cheddar, and without adding any additional material laid four more eggs after an interval of thirteen days from the young leaving the nest. These were reduced to two and were fed with soaked, pressed bread on the bird-table every day by either the old cock or the hen, and I have seen both young follow the hen up to the cedar branch as she went to resume incubation of the second lot of eggs. When she flew to the table to feed, the two young would be sure to turn up and follow her there. The second lot of eggs was hatched off. STANLEY LEWIS.

FULMAR PETREL INVESTIGATION (1934).

To the Editors of BRITISH BIRDS.

SIRS,—I should like to inform readers who have not yet contributed notes to the above investigation, that all the information and schedules should now be sent in to me.

The results obtained so far have been most successful, but the lack of negative information is causing some concern. Without definite information from a district in which the Fulmar might possibly breed I cannot properly infer that it is not breeding there. I would be very grateful, therefore, for negative information from any part of the British Islands.

Further schedules can be supplied on application.

27, INVERLEITH TERRACE, GEORGE WATERSTON.
EDINBURGH.

THE GANNET COLONIES OF ICELAND.

To the Editors of BRITISH BIRDS.

SIRS,—Mr. Brian Roberts's census of Gannets in the six occupied Icelandic colonies (*Br. B.*, Vol. XXVIII., pp. 100-105) is interesting, but loses some value because he does not indicate even approximately what proportion of the Gannets present were non-breeders, except at the tiny Grimsey colony of 21 nests, and in our opinion his total figure of 13,600 pairs is likely to be inaccurate since his methods of calculation are loose and misleading.

Even if we presume, as he does, that all the birds he counted were breeders or occupiers of nests, we consider that his vague deduction for pairs at the nest and his addition of 30 per cent. for pairs away fishing and in the air are unsatisfactory. From our further and close experience (particularly R.M.L.'s) of the large colony at Grassholm, S. Wales, we believe that during the daytime, from June until early September, on an average only about one nest in twenty (5 per cent.) has both of the pair of adults present, and that not one in fifty (2 per cent.) has a young bird untended or alone. The egg or very young chick is, of course, always guarded by one or other of its parents. There can be practically no *pairs* of nesting adults in flight or away fishing. Those fishing or in the air are mates of birds brooding below, or non-breeders. We speak, of course, of a colony observed working under normal conditions undisturbed by any human element. Therefore, the total number of birds counted *at nests*, less about 3 per cent. (the difference between the above percentages of pairs and absentees), actually represents the number of *breeding pairs* in the colony.

Mr. Roberts has misread the application of the 50 per cent. addition quoted from the 1924 Grassholm census, when it was suggested (as a check on other figures) that 2,420 *birds* at nests, plus (only) 50 per cent., 1,210 *birds*, equalled (a minimum of) 1,800 *pairs*. He suggests (p. 101) that 3,636 birds at nests represent 3,000 pairs, and then adds 30 per cent. for further pairs away fishing and in flight, thus arriving at a total of 3,900 pairs, a very different proposition.

But again, on p. 104, in dealing with Eldey, he takes 14,000 or 14,500 *birds*, adds 30 per cent. (say 4,000 odd *birds*) to get a rough total of 9,000 *pairs*. His methods of applying the 30 per cent. are thus decidedly at variance.

Were we calculating on his counts for the Vestmannæyjar colonies our figures would be :—

3,636 birds at nests less 3 per cent. ... ... = 3,527 pairs
On the same basis at Eldey (if correct),
14,500 birds at nests less 3 per cent. ... = 14,065 ,,
Add Grimsey ... ... 21 ,,

Total ... 17,613 pairs

This is much removed from Mr. Roberts' figure of 13,600 pairs, the composition of which, we must say, further puzzles us. On p. 101 he gives the total for the Vestmannæyjar colonies as 3,900 pairs, but on pp. 104-5, without any explanation, they amount to 4,690 pairs! This surely is loose calculating?

The estimate for Eldey on acreage and concentration seems to us excessive. At Grassholm the Gannets nest mainly on gently-sloping ground (comparable with the top of Eldey) and the concentration is very close—it cannot well be closer. Slightly under 5,000 nests occupy two acres and on that area we counted 5,113 birds. An over 80 per cent. closer concentration for Eldey at 14,000 birds on three acres seems too high an estimate. It *might* be possible—non-nesting birds can concentrate much closer than those at nests—but until we know approximately the proportions of each, any estimate of the number of *breeding* pairs is bound to be speculative.

Mr. Roberts makes no other mention of immature and non-breeding birds except to say that on Grimsey there were 28 non-breeders (40 per cent. of the total birds present) in the colony. That in itself should have suggested to him the importance of attempting to find out what proportion of these there might be at the other Icelandic colonies. As, however, he was unable to land at these, there is some excuse for the omission. We can only suggest below a possible method for such future occasions when observers are unable to land at large colonies.

That non-breeders in fully mature plumage may occupy a colony or ledge and, at a short distance, have all the appearance of *bona fide* nesting pairs, was well illustrated on the occasion of the cruise around Grassholm of members of the International Ornithological Congress on July 8th, 1934. The Gannets at first view appeared to be nesting from the N. point to the extreme S.W. corner, including the whole of the large detached rock known as West Tump. When, however, the whistles of the destroyers were blown, the non-breeders deserted their stations *en masse*, leaving only the breeding birds, which remained staunch to their eggs and young. It was then seen that the vacated area (about one-third of the total area covered by Gannets) was devoid of nests or birds, though quite as white with guano as the breeding area.

In conclusion we would point out that the number of non-breeders varies considerably with the hour of the day and the time of the year. At night in June, 1934, it was negligible at Grassholm. The number is largest soon after sunrise. At 8 a.m., in June, approximately 2,000 birds were present off the nesting ground. At 10 a.m., on August 18th, 1934, there were at least 3,000, and at 9 a.m. on the 25th the extraordinary assembly of 6,000 adults with few immatures was spread over an area as great as the gannetry itself. There can be no doubt that at certain times of the day partners of birds which are brooding young in the colony itself rest and preen among the groups of non-breeders outside and so considerably swell their ranks.

R. M. LOCKLEY.
H. MORREY SALMON.

[As Mr. Brian Roberts has now sailed in s.s. *Penola* as a member of an Antarctic expedition which will be away, we believe, for some two years, he will be unable to answer this informative criticism until his return.]

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CONTENTS OF NUMBER 7, VOL. XXVIII., DECEMBER 1, 1934.

PAGE
The Names of the Song-Thrushes. By H. F. Witherby 186
On a Flock of Razorbills in Middlesex found to be Infested with Intestinal Flukes. By Percy R. Lowe. (Parasitological Report. By H. A. Baylis, M.A., D.SC.) 188
Territory in the Great Crested Grebe. By L. S. V. Venables and David Lack 191
Plumage Changes Observed in an Iceland Gull in Somersetshire. By H. Tetley 199

Notes :—

Spotted Flycatcher Laying Three Times in one Nest (H. J. K. Burne) 203
Coal-Tit's Double Brood (H. E. Pounds) 203
Dartford Warbler in Devonshire (S. Baron) 204
Incubation- and Fledging-Periods of Wren (R. H. Brown) ... 204
Young Swallows assisting in Building the Second Nest (A. Astley) 204
Late Passage of Swifts in Sussex (P. A. D. Hollom) 204
Tawny Owl eating Newts (W. A. Smallcombe)... 205
Hobby Breeding in Breconshire (J. G. Williams) 205
Osprey in Radnorshire (J. G. Williams) 205
Little Bittern in Sussex (K. P. Keywood) 206
Pintail Breeding in Dumbartonshire (P. Rickman) 206
Diving of the Shoveler (Bertram Lloyd) 206
Ferruginous Duck in Merionethshire (E. H. T. Bible) 207
Status of Black-necked Grebe Colony in Forth Area (W. Serle, Jnr.) 207
Emigration of Lapwings in Winter, 1933-4 (H. F. Witherby and Miss E. P. Leach) 208
Temminck's Stint in Ayrshire (Mrs. W. Boyd Watt) 209
Broad-billed Sandpiper seen in Sussex (N. F. Ticehurst) ... 209
Wood-Sandpiper in East Lothian (W. Serle, Jnr.) 210
Incubation-Period of Greenshank (Miss W. M. Ross) 211
Red-necked Phalarope in Cardiganshire (W. Hastings Smith) 211
Mortality among Young Common Terns in Lancashire (H. W. Robinson) 211
Great Skua in Derbyshire (Dr. W. Shipton) 212

Short Notes :—

Little Bunting in Fife. Snow-Bunting Inland in Essex. Willow-Tits in Radnorshire. Garganey Nesting in Kent. Grey Plovers in Hertfordshire. Black Terns in Westmorland and Lancashire. Puffin in Surrey. Quail Nesting in Kent and Observed in Hampshire. Courtship Flight of Temminck's Stint 212

Letter :—

The Grassholm Gannets (R. H. Brown) 214

Reviews :—

Quest for Birds. The Problems and Pleasures of an English Bird-Watcher. By W. K. Richmond 214
Scolt Head Island. Edited by J. A. Steers 216

THE NAMES OF THE SONG-THRUSHES.

BY

H. F. WITHERBY.

In the article on " Additions and Alterations to the British List " in the September issue of this magazine it was stated (p. 96) that the proposed alterations in the names of the Song-Thrushes would be postponed here until the point regarding the name *philomelus* for the Continental form was cleared up. The List Committee of the B.O.U. has now decided that this name must be retained since it is prior to *planiceps* which was suggested (*Ibis*, 1934, p. 832).

The name *ericetorum* (1807) of Turton for the British Song-Thrush has priority in date over *philomelus* (1831) of Brehm, and the British bird thus becomes the typical form.

The changes will therefore be as follows :—

166. *Turdus ericetorum philomelus* Brehm.

THE CONTINENTAL SONG-THRUSH.

instead of *Turdus philomelus philomelus* Brehm.

167. *Turdus ericetorum ericetorum* Turton.

THE BRITISH SONG-THRUSH.

TURDUS ERICETORUM Turton, British Fauna, I., 1807, p. 35, based on Lewin, Birds of Great Britain, II., pl. LXIII., p. 68, 1796 (1807—England).

instead of *Turdus philomelus clarkei* Hartert, 1909.

168. *Turdus ericetorum hebridensis* Clarke.

THE HEBRIDEAN SONG-THRUSH.

instead of *Turdus philomelus hebridensis.*

The bird figured by Lewin as the Heath Thrush is certainly a Song-Thrush and the name *Turdus ericetorum*, given to it by Turton, must stand as the earliest valid name of the Song-Thrush. The British race thus becomes the typical one.

It is very unfortunate that the name of such a well-known bird as the Song-Thrush must be altered and, doubtless because of this, opposition has again been raised to the system of strict priority. These complaints are really not justified. The facts show that since the publication of the systematic list in the last part of the *Practical Handbook* in 1924 the changes made on grounds of nomenclature affect only ten species or, if all the subspecies involved in these changes are counted, then fourteen. This is out of 496 forms in ten years and it must surely be admitted that the system has stood the test and is as stable a system as can be agreed upon. Moreover there is every reason to suppose that there will be still fewer changes in the next ten years.

These changes due to nomenclature have involved the Mealy, Greenland and Lesser Redpolls, White-winged Lark, Red-throated Pipit, Yellow-browed Warbler, Continental, British and Hebridean Song-Thrushes, Snowy Owl, American Pectoral Sandpiper, British Lesser Black-backed Gull, Iceland Gull and the generic name of the Crane.

There have also been eighteen additions to the list making now a total of 514 forms.

ON A FLOCK OF RAZORBILLS IN MIDDLESEX FOUND TO BE INFESTED WITH INTESTINAL FLUKES.

BY

PERCY R. LOWE.

On October 26th, 1934, a Razorbill (*Alca torda*) was sent to the Bird Room of the British Museum, in the flesh, by Mr. John Stilgoe, Chief Engineer of the Hampton Waterworks, who had recovered it from the Littleton Reservoir, where it had been picked up dead along with fourteen others.

The bird was sent to us as being a strange and unfamiliar species to the staff of the waterworks. It was handed over to Mr. Bishop to be converted into a skin, and seemed to be in perfect condition and plumage. However, on handling it, Mr. Bishop noticed that blood was extruded from the vent and, on opening the abdomen, more blood was found free in the cavity. The walls of the lower intestines were also turgid and engorged with extravasated blood. The state of affairs was obviously pathological, although the condition of the general muscular system was quite good, and there was a considerable amount of subcutaneous fat on the body.

After skinning, the bird was handed over to my colleague, Dr. Baylis, with a request for a parasitological report (see below), and he almost immediately informed us that the lower intestine was infested with a species of fluke.

I then got into touch with the staff of the reservoir and was fortunate enough to catch Dr. Rushton on the telephone, who very kindly promised to do his best to send us the fourteen other dead birds. This was done, and although the bodies by this time were rather decomposed, Dr. Baylis was able to make some further investigations (see below). Fourteen of the birds were adults and the other was a bird of the year.

* * * *

There are one or two outstanding points of interest about the occurrence of these fifteen dead Razorbills which were picked up in Littleton Reservoir.

(1) I think it is distinctly unusual for so many Razorbills to be simultaneously picked up dead in any one place.

(2) Their discovery synchronized with a rather violent and sudden storm which had occurred a day or two before. Was this a mere coincidence? On discovering the loss of blood which the flukes must have caused we were naturally inclined

to read things as follows: loss of blood—weakness—storm—inability to keep to the open sea—birds driven inshore.

(3) It is, however, unlikely that fifteen Razorbills, all suffering from the same infection, would be driven inshore in one compact band, and still less to the same spot.

(4) Moreover, in view of the fact that as Dr. Baylis informs us the parasite, with which these Razorbills were chiefly infected, has for one of its hosts freshwater fishes, the question arises how long might not these birds have been living on the reservoir, and whether they might not have become infected during their sojourn there.*

(5) If they were so infected on the reservoir, what cause had driven them there in the first instance; and what, if any, evidence is there to presume that Razorbills affect fresh, or even brackish, water in their normal life cycle.

I append a report on the parasites, which has been very kindly supplied by Dr. H. A. Baylis.

PARASITOLOGICAL REPORT.

By H. A. BAYLIS, M.A., D.SC.

FIFTEEN birds were received for parasitological examination. In all of them the rectal portion of the intestine was highly inflamed, and on being opened was found to be full of blood. Attached to its lining were enormous numbers of Holostomes, or Strigeid flukes. These were determined as *Cotylurus platycephalus*, a species which does not seem to have been recorded previously in the Razorbill, but has been found in various other fish-eating birds. There can be no doubt that excessively heavy infestation with these parasites was the primary cause of the death of the birds. The extensive hæmorrhage observed in nearly all the birds, and their simultaneous death, suggest that all the infections had been acquired at about the same time, and that they were of quite recent date. In some of the birds, however, worms of various sizes were found, showing that successive infections had taken place within a few days of their death.

---

* Mr. J. P. Hardiman informs us that he was at Littleton Reservoir with Mr. J. B. Watson on October 26th, and took away one of the dead Razorbills, so that the total number was sixteen. Mr. Hardiman has kindly made enquiries with a view to discovering when the Razorbills first appeared and when they died, but they were unfortunately not observed before the 26th, when they were found dead.

It may be of interest to record here that Dr. Robert J. Buxton informs us that an adult Razorbill was picked up dead at Easneye, Ware, Herts, on October 23rd. The bird was not dissected and it can only be said that it was in fair condition and had been dead some two or three days.—EDS.

A fatal enteritis, due to a closely-related parasite, has been recorded in pigeons. This worm is not normally a parasite of pigeons, but of plovers and ducks, and it seems probable that both in the case of the pigeons and in that of the Razorbills the severity of the symptoms was partly due to the infection having been accidentally acquired by an abnormal host.

The life-history of *Cotylurus platycephalus* is unknown, but the larval forms of several species of the genus occur in freshwater snails, leeches or fishes, or in amphibians and terrestrial animals. None appear to be known in marine hosts. Three other kinds of parasitic worms were found in the Razorbills, and it is of great interest to note that, though the life-history of only one of them is actually known, they all belong to genera whose larvæ occur in freshwater fishes, and are unknown in marine fishes. It appears almost certain, therefore, that the birds had acquired all these parasites after their arrival in fresh water. It was thought at first that the loss of blood and general weakness caused by their heavy parasitic infestations had led to the birds being carried inland by a gale which occurred a day or two before they were picked up. The birds had clearly taken no food recently when dissected, but they were in fat condition. It is therefore more probable that, having for some unknown reason left the sea, they had fed for a few days on freshwater fishes, thereby acquiring infection with a series of parasites which were not normal to them. Most of these parasites had had time to grow to maturity, but their presence (especially that of the *Cotylurus*) had probably produced more serious effects than it would have had on their usual hosts. There was, in fact, a sudden outbreak of parasitic enteritis, which caused the birds to cease to feed and rapidly proved fatal to them.

TERRITORY IN THE GREAT CRESTED GREBE.

BY

L. S. V. VENABLES AND DAVID LACK.

INTRODUCTION.

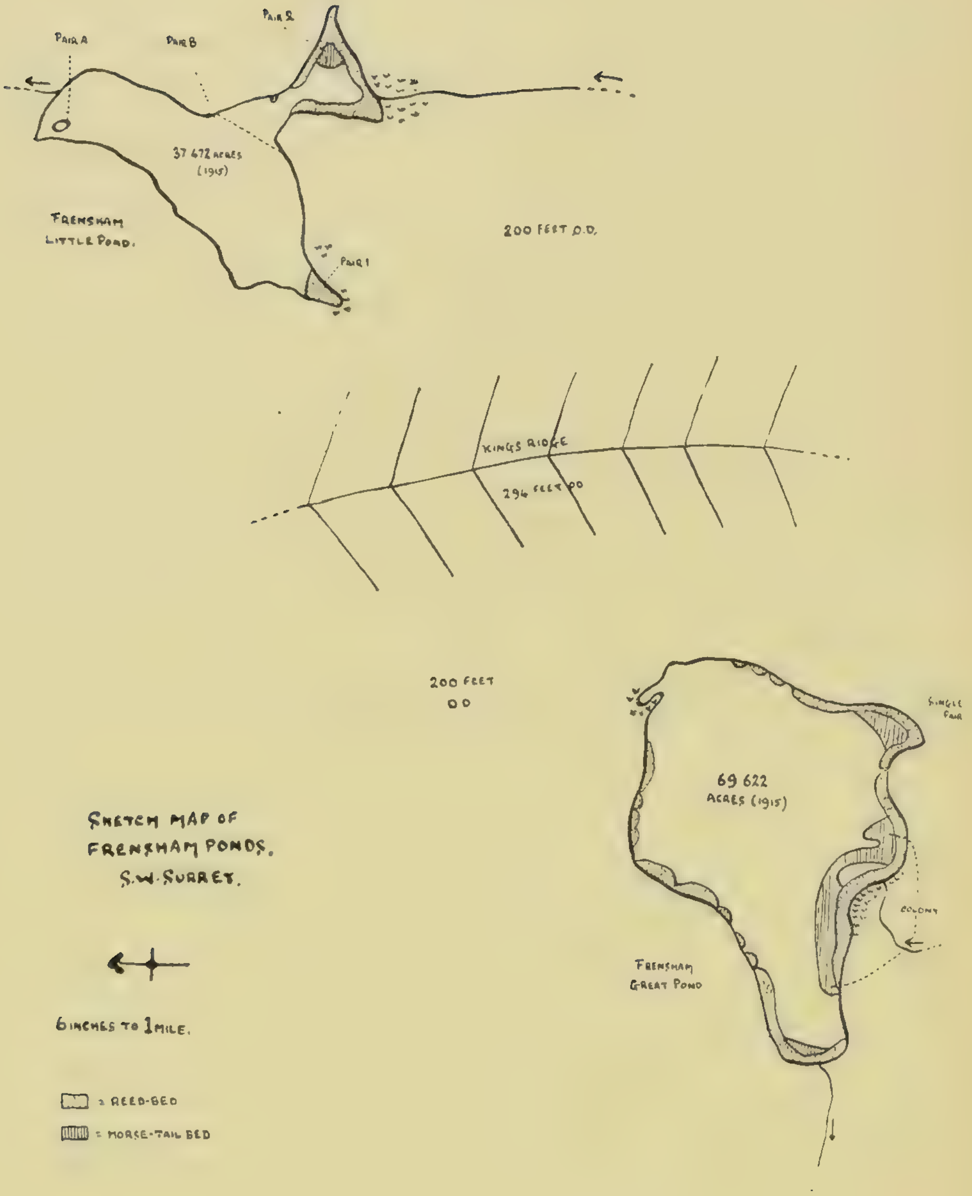
IN their review of territory in bird life, D. and L. Lack (6) consider that the claims for territory have been much exaggerated and that, especially, there is not adequate proof in any species that territorial behaviour has food value. It was further questioned whether territorial behaviour limited the population density at all, irrespective of its possible food value. Subsequently, Huxley (4) has answered the latter question in the affirmative for Coot (*Fulica a. atra*) and Mute Swan (*Cygnus olor*), while Venables (8) has shown that territories, at least food territories, do not limit the population density in the Dartford Warbler (*Sylvia u. dartfordiensis*). The following observations show that in the Great Crested Grebe (*Podiceps c. cristatus*) territorial behaviour at times limits the population density, but that this behaviour bears no direct relation to the food supply. We would record here our grateful thanks to Professor Julian Huxley for reading through the manuscript and supplying some valuable criticisms.

Harrisson and Hollom (1) give a detailed account of the distribution of the Great Crested Grebe and of the great increase in numbers which has occurred since about 1860. The authors (*loc. cit.*, p. 124) take the usual view that " territory acts as a safety valve against over-population and is responsible for spread outwards from populated areas ". They do not, however, include observations on territorial behaviour in their paper.

FIELD OBSERVATIONS.

The following observations were made by Venables in 1932, 1933 and 1934 at the two Frensham Ponds, on the Surrey-Hampshire border. Great Pond has an area of 69½ acres and Little Pond of 37½ acres (1915).

Great Pond was colonized in 1890 (Harrisson and Hollom, *loc. cit.*, p. 85). Records of the number of breeding pairs are available for 1907 to 1920 (kindly communicated by H. Bentham), for 1931 (Harrisson and Hollom), and for 1932 to 1934 (Venables) as follows: 1907 seven, 1908 four, 1909 five, 1911 six, 1912 and 1913 four, 1915 five, 1920 seven, 1931 and 1932 six, and 1933 and 1934 eight pairs. There has thus been a small increase in numbers in recent years.



SKETCH MAP OF FRENSHAM PONDS, S.W. SURREY.

The Great Crested Grebe is absent in winter. Birds begin to arrive on the pond in mid-February and number about thirty or forty in mid-March, after which they decrease. Most of these are migrants passing through to other breeding grounds ; they do not stay for more than a few days and their numbers fluctuate greatly. By early April the last of the passage migrants usually depart. (Their departure cannot be attributed to aggressive behaviour by the remaining pairs which will later nest). Much fighting is observed among the Grebes during March, some at least of which is associated with pairing. This fighting occurs mainly in the open water in the centre of the pond and is quite distinct from the fighting discussed later, which is associated with the nesting sites in the reed-beds.

The later passage migrants are already in pairs before they leave for their nesting grounds ; hence pairing often, if not invariably, precedes the taking up of the territory. In this respect the Grebe differs from Passerine birds, the group in which Howard (2) first applied the term territory.

In early May a few pairs commence breeding in the, as yet thin, reed-beds off the south shore, but these nests seem invariably to get robbed, and it has always finished up with six or seven pairs breeding in a colony along the south shore in a horsetail (*Hippuris*) bed. In this colony (six pairs in 1932 and seven pairs in 1933 and 1934) no fighting has been observed except for an occasional squabble in the horsetail near the nests, which probably indicates that the immediate neighbourhood of each nest is kept clear of intruders by the pair in possession. This has also been observed by Huxley (3), who noted, as was the case on Great Pond, that such territories are not food territories. The birds feed amicably together all over the water, and take their young out to the centre of the pond a very few days after they are hatched.

In 1933 and 1934 one pair behaved differently. These nested in a horsetail bed in an open bay in the south-east corner. Before nesting they were extremely pugnacious, and kept the whole bay (an area of about ¾ acre) free of other Grebes, any that tried to enter being vigorously attacked and driven off. By the time that the nest was built other Grebes had abandoned this bay. Coots were also violently attacked, but finally bred in the portion of the bay more remote from the Grebes' nest. But the Coots were attacked by the Grebes whenever they entered the Grebes' portion of the bay. Both birds, unless one was incubating, took part in these fights, and then, on returning and while still excited, would frequently display and almost invariably add a few more reeds to the nest. On the occasions when the female was sitting, the victorious male would frequently carry material back to the nest. As a result, when the eggs hatched out, this nest was much larger than is normal for the species. The Grebes abandoned their aggressive behaviour as soon as the young hatched out and took them to the middle of the pond. Hence their territory was not correlated with food supply for the young.

Little Pond was colonized in 1907, and counts of the breeding pairs are available as follows : One pair in 1907, 1908 and 1909, none in 1911 or 1912, one pair in 1913, 1915 and 1920, two pairs in 1932 and 1933 and three pairs in 1934. There is a conspicuous passage migration as on Great Pond. There are only two reed-beds on the pond suitable for a floating Grebe's nest, a small bed in the south-west, and a large one of several acres in extent in a bottle-shaped bay in the south-east. Each of these held one pair of Grebes in 1932, 1933 and 1934.

Pair I. in the south-west corner were territorial in the sense that they both kept to the south-west portion of the pond until their young hatched, when they took the latter to the centre of the pond. No other Grebes frequented this south-west portion, so that one cannot say to what extent pair I. were aggressive against their own species. A few pairs of Coot and Moorhen (*Gallinula ch. chloropus*), which nested in the same reed-bed, were quite unmolested, even when the female Grebe arrived at her nest on one occasion to find her eggs being incubated by a Coot. She waited quietly while the intruder slipped off and then mounted in her place.

Pair II. were extremely aggressive, and successfully kept all others of their species from entering their bottle-shaped bay, patrolling up to a distance some way outside the " neck ", thus maintaining an area of 8½ acres. All passage migrant Grebes which attempted to enter this area were vigorously attacked, and one of the half-grown young of pair I. which once tried to enter would probably have been killed had not the observer distracted the attention of the attacking male (the female was then incubating). As with other Grebes, this pair left their territory and abandoned their aggressive behaviour when the young hatched, the latter being taken to the centre of the pond. Unlike the aggressive pair on Great Pond, pair II. did not attack other species. Coot, Moorhen, Tufted Duck (*Nyroca fuligula*) and a passage migrant Black-necked Grebe (*Podiceps n. nigricollis*) frequently entered the area, always without molestation, and Tufted Duck, Coot and Moorhen bred there.

In 1934, after the passage migrants had departed, two extra pairs, A and B, remained on Little Pond. For several days these made repeated attempts to enter the bay occupied by pair II., but were always repulsed. Pair A then retired to the centre of the pond, and later frequented the northern part, where there were no reed-beds. Pair B continued to attempt an entrance, and on April 17th were joined by a fresh arrival, and then all three made periodic attempts on the bay. The odd bird left about April 22nd, but pair B continued to fight and to be repulsed until May 2nd, when they also left. But pair A stayed, and finally nested on a small island in the north part of the pond. It is extremely unusual for a Great Crested Grebe to build on dry land.

FACTORS AFFECTING THE GREBE POPULATION.

1. *Mortality.*—The mortality of eggs and young is very high, the former being taken by collectors, the latter by large pike (*Esox lucius*). The bird normally lays four eggs in the nest, and, until late in the summer, the pairs always laid again when their eggs were destroyed. But in 1932 and 1933 the average of successfully reared young was only 1.5 per pair. (In 1934, with more adequate protection, this average was 2.5 per pair).

2. *Nesting Site.*—On Great Pond there is much untenanted but suitable reed-bed, and nesting site is ruled out as a factor affecting the population density. On Little Pond there is a small reed-bed occupied by pair I., and one larger reed-bed in which pair II. prevented other Grebes from nesting. Hence it is primarily the aggressiveness of pair II., and only secondarily the nesting-site factor, which limited the population here. Pair B would almost certainly have bred on Little Pond had other reed-beds been available, and pair A nested in spite of this deficiency. (As has previously been pointed out by Lack (5), the restriction of a species to a particular type of nesting site (although it sometimes limits distribution) is often one of behaviour and not of necessity. Pair B successfully reared their young in an unusual site, but pair A were evidently not so adaptable in their behaviour).

3. *Food.*—In 1933 and 1934 eight pairs bred on Great Pond, one pair per 8.5 acres. On Little Pond, in 1932 and 1933, the

density was one pair per 18.5 acres. In 1934 four pairs tried to nest there (one pair per 9 acres), but only three succeeded (one pair per 12.5 acres). Tucker (7) found that one pair per 4.5 acres was the usual maximum in Oxfordshire, Berkshire and Buckinghamshire.

There was no evidence that food supply limited the Grebes, but this is extremely hard to determine. The number of pairs breeding on the ponds has been slowly increasing, and there is no reason for supposing that the food maximum has yet been attained. Further, although it is not conclusive to compare one pond with another since the fauna may be different, it is noteworthy that in neither of the Frensham Ponds does the density approach to one pair per 4.5 acres, and Little Pond supports a smaller density than Great Pond. On the latter, at least, it is very unlikely that the food maximum has been attained.

4. *Territorial Behaviour.*—Owing to the situation on Little Pond, territorial behaviour can definitely be considered a factor limiting the Grebe population. On Great Pond an aggressive pair kept one small part free of other Grebes, but there were many other suitable reed-beds, and the total breeding population on the pond was probably unaffected by their behaviour. This aggressive behaviour is not conspicuously developed in all individuals, and seven pairs were sufficiently lacking in it to nest in a colony. Hence its effect on the population density of Grebes in general is most uncertain.

Owing to the variability in its development, one can probably say that territorial behaviour confers no special advantage on the bird. Had it done so, it is remarkable that it should be conspicuous in only two pairs, while seven pairs reared their young in a colony.

Territorial behaviour is clearly not correlated with food supply in this species, as has sometimes been assumed. First, the greatest food pressure presumably occurs when the young have hatched, but territories are at that time abandoned, the young being taken to the centre of the pond. Secondly, on Little Pond, pair II. attacked other individuals solely in their bay. Had food supply been its object, fighting would have been necessary over the whole pond, but when pair A deserted the south-east of the pond and bred in the north, they were unmolested. Thirdly, while pair II. defended 8½ acres, which is, perhaps, an adequate feeding area, the pair on Great Pond defended only ¾ acre, which was presumably inadequate as a feeding area. Fourthly, the latter pair attacked not only Grebes, but also Coots, and the latter are not food competitors of the Grebes.

Territorial behaviour is clearly correlated with the position of the nest. Even the colonial pairs sometimes attacked other individuals which came too close to their nests. This habit seems merely to have become greatly exaggerated in the territorial pairs. The effect of this behaviour was to render uninhabitable for other pairs reed-beds which could otherwise have been utilized for nests. On Little Pond, with its scarcity of reed-beds, this resulted in only two pairs inhabiting the pond, although it could provide sufficient food for at least one, and probably several, more pairs. It was only when they modified their normal nest-building habits that a third pair could breed there. Howard (2) claims as a general principle that the "establishment of territories serves so to regulate the distribution of pairs that the maximum number can be accommodated in the minimum area". But on Little Pond, *territorial behaviour, so far from doing this, actually prevented the number of breeding pairs from reaching the maximum which* (*from both food and nesting sites*) *the lake could support*). It was therefore adverse, not beneficial, to the species.

Harrisson and Hollom (*loc. cit.*, see esp. Tring, p. 75) have shown that at the beginning of an increase in the Grebes, a lake has often held many more pairs than the number which it has fairly steadily supported in later years. The writers assume that there was an initial over-population followed by an adjustment, and the latter is evidently considered by them to have been brought about by territorial behaviour. But the observations at Frensham Ponds, particularly with regard to the great individual variation in aggressiveness and to the existence of colonial pairs, render it almost impossible to believe that territorial behaviour could have effected this adjustment in the population.

SUMMARY.

The following conclusions apply to the Great Crested Grebe population in the area studied :—

1. Territorial behaviour must definitely be reckoned as one factor affecting the density of the breeding population.

2. This territorial behaviour centres round the nesting site, and is extremely variable in its development, some individual pairs being very aggressive and others colonial.

3. The territory is not correlated with food supply.

4. Its variability makes it extremely difficult to see how territorial behaviour could effectively regulate the distribution of pairs so that the maximum number could be accommodated in the minimum area, as has sometimes been claimed for it.

5. Extreme territorial (aggressive) behaviour seems of no advantage to the species. In the case where it limited the population density, it tended to prevent the lake from supporting the maximum number of pairs which food and nesting sites would have permitted.

REFERENCES.

(1) HARRISSON, T. H., and HOLLOM, P. A. D. (1932) " The Great Crested Grebe Enquiry", *Brit. Birds*, XXVI., 174 *et seq.*

(2) HOWARD, H. E. (1920). *Territory in Bird Life*, Chap. V.

(3) HUXLEY, J. (1926). *Essays in Popular Science*, 170-176.

(4) HUXLEY, J. S. (1934). " A Natural Experiment on the Territorial Instinct ", *Brit. Birds*, XXVII., 270.

(5) LACK, D. (1933). " Habitat Selection in Birds ", J. *Animal Ecology*, II., 246-247.

(6) LACK, D. and L. (1933). " Territory Reviewed ", *Brit. Birds*, XXVII., 179-199.

(7) TUCKER, B. W. (1933). " The Great Crested Grebe Investigation in Oxon., Berks and Bucks, 1933 ", *Report of the Oxford Ornithological Society for* 1933.

(8) VENABLES, L. S. V. (1934). " Notes on Territory in the Dartford Warbler ", *Brit. Birds*, XXVIII., 58-63.

PLUMAGE CHANGES OBSERVED IN AN ICELAND GULL IN SOMERSETSHIRE.

BY

H. TETLEY.

THE Iceland Gull (*Larus leucopterus*), previously recorded in these pages from the Bristol district, has been observed on a number of occasions since the last published note (*antea*, Vol. XXVII., pp. 170-1), the latest being on October 7th, 1934. With the exception of the three dates mentioned later, it has always been seen in the vicinity of Ashton Swing Bridge, Rownham Ferry or Cumberland Basin. But on December 24th, 1933, and March 23rd, 1934, it was on the large (No. 3) reservoir at Barrow Gurney, on the former occasion settled on the water, and on the latter soaring above it, and later being seen on the same day just below Rownham Ferry, by the Rev. F. L. Blathwayt, Mr. B. W. Tucker and myself. And on April 22nd, 1934, it was seen at Blagdon reservoir by Mr. H. H. Davis and myself.

It has thus been in the Bristol neighbourhood for a period of nineteen months or more (it was first noted by Mr. L. H. Matthews on January 27th, 1933), and as detailed observations have been made on its plumage, when occasion offered, it seems a suitable opportunity to summarize this knowledge, as it is unlikely that any bird of this species has been under observation before for so long a period.

The plumage-cycle of any large gull that breeds in the Northern Hemisphere, and takes four years to become adult, as given by Dwight "The Gulls (Laridæ) of the World" (*Bull. Amer. Mus. Nat. Hist.*, Vol. LII., Article III., 1925, Plate IX., p. 94), may be summarized as follows :—

In the first year, stable from the middle of August to the middle of September, when a moult begins, which is complete by the beginning of December. Another moult starts in the middle of March and is complete by the middle of May. From the middle of May to the middle of July and from the beginning of October to the middle of March are periods of stable plumage in the next and all subsequent years, the intervening periods being taken up by moult.

In order to get at the sequence of plumage, it seems best to start with the description of the bird, as seen through X8 binoculars and X25 telescope and at close range on October 7th, 1934. The details are as follows :—

Head, neck and underparts—white. *Tail*—white, but appeared to be faintly freckled buff. *Mantle and scapulars*—ash-grey. *Wing-coverts*—white or pale buff streaked buff vertically. *Primaries*—white. *Legs and feet*—flesh. *Iris*—yellow. *Bill*—pale grey coloured yellow near the tip and with a distinct dark patch near the tip of the lower mandible. The general impression of the bill was that it was, in colour, a paler edition of the mantle. At certain angles, when the bird pointed it downwards, it seemed to have a tinge of yellow, but grey was the predominating colour.

In flight the wings showed a grey base with pale fawn or white coverts, and were bounded by a very distinct wide white margin.

This agrees closely with the third winter plumage given by Dwight (*loc. cit.*, p. 253) with the exception of the colour of the legs and feet and bill which, as stated there, are taken from skins. He gives no description of the iris. And the bird, as shown above, will, by October 7th, have completed its moult and be in its winter plumage.

This being the case, the Iceland Gull must have been in its first winter plumage in January, 1933, and the sequence of plumages in this Bristol bird has been as follows :—

1*st winter*—details taken in February, 1933.

Head, neck, mantle and underparts—pale cream, with some buff streaks on the mantle. *Tail*—cream. *Primaries*—white (or very pale cream) contrasting strongly with the mantle and upper surface.

Legs and feet—flesh-pink. *Iris*—dark brown. *Bill*—pale yellowish-pink at the base, the terminal half dark brown (or black).

1*st summer*—details taken in June, 1933.

Practically the same as in February, but Mr. W. R. Taylor notes that there was a dusky streak running diagonally across the centre of the wing. This had disappeared in December.

2*nd winter*—details taken in December, 1933.

Forehead and crown—white with faint greyish streaks. *Neck*—dusky white. *Underparts*—white. *Mantle*—white with a slight greyish tinge more apparent at some angles. No buff pencilling as in February. *Scapulars*—under some conditions had a greyish tinge, but Mr. H. J. R. Pease and the writer examined the bird at close range on December 23rd, 1933, and could not see any actual grey in the plumage. *Primaries and tail*—white.

Legs and feet—flesh colour, a little deeper than formerly. *Iris*—pale yellowish at close quarters, appearing brown when seen further away. *Bill*—basal half pale-pinkish, front half dark brown with extreme tip showing yellow. The colour of the bill was changing gradually by the enlargement of the yellow at the tip and the consequent diminution of the dark band.

2*nd summer*—Unfortunately, the bird was not seen between April 22nd (when it was too far off to note details) and August 31st, 1934, so that the summer plumage (second half of May to mid-July) was completely missed.

On September 3rd, 1934, when the bird would be moulting from 2nd summer to 3rd winter plumage, Mr. H. H. Davis saw the bird at close quarters and supplied the following details :—

Head, neck, breast and belly—white, with a few pale streaks on the crown, only apparent at some angles. *Mantle and scapulars*—pale grey. *Wing-coverts*—vermiculated pale brownish-grey. *Primaries and tail*—white.

Legs and feet—flesh. *Iris*—yellow. *Bill*—front half dirty yellow, ridge of upper mandible yellow, basal half brown or soiled.

On October 7th the bird would have completed its moult into 3rd winter plumage, the details of which have been given above, but it may be noted that the colour of the bill had altered considerably in the meantime.

Dr. Dwight (*loc. cit.*, p. 252) states that, as regards the 1st winter plumage : " There is an unusual amount of variation. Some birds have the wings and tail, and even the body, practically white with only a few specklings or cloudings. This is due partly to moult, partly to bleaching, and mostly to individual variation ".

This would account for the fact that, in what is considered here to be the 1st winter plumage, the bird was far whiter and less marked than the " Iceland Gull. Immature ", figured, in a photograph, in T. A. Coward's *Birds of the British Isles*, Series III., Plate 93, a bird which is certainly in that stage.

The Bristol Iceland Gull is not yet (October, 1934) adult, and the sequence given, working from its present plumage backwards, would further confirm that it was in its first winter on arrival in this district.

There is one important difference between the sequence of plumages as given by Dwight and as given in the *Practical Handbook*. The former says that the adult plumage is assumed in the 4th winter, and the latter in the 5th winter, the bird having the same sequence as in the larger Glaucous Gull. And on a closer comparison between these two authorities, I find that the 3rd winter plumage of the *Practical Handbook*, " from very meagre material available ", is not recognized by Dwight, but that the 4th winter plumage corresponds to the 3rd winter of Dwight, and the 5th to the 4th. In other words, the Iceland Gull takes a year less than the Glaucous Gull to reach adult plumage. Certainly, the Bristol bird has never, so far, agreed completely with the 3rd winter plumage of the Glaucous Gull in which " crown heavily streaked brown " is the first character given ; this is a feature which has not been seen at all.

The movements of the bird during this period have been uncertain, as it has been seen when the tide has been dead low as well as when it was high up. At the former times it was resting on the mud or feeding with other gulls at a drain, and at the latter it was usually at rest by Cumberland Basin.

Its relation with the other gulls showed that it was able to look after itself. On several occasions it was standing amongst the others, but with a conspicuous circle, free of birds, round it, and any gull that came near was at once approached by the Iceland Gull and moved off, though it did not actually touch any. This behaviour applied even to the adult Lesser Black-backed Gull.

[Unfortunately, when working out the plumages of the Iceland Gull for the *Practical Handbook*, I found the material available inadequate to be certain, and the late Dr. Dwight had the same difficulty. In Mr. Tetley's interesting account it is, unfortunately, uncertain what age the bird was when it was first observed, but Mr. Tetley's description of what he terms the first winter plumage seems more applicable to the second winter. It must be remembered that the wings and tail are not moulted in the first autumn and therefore if the bird was of the age supposed its wings and tail would have been those of the juvenile plumage and, as described, they would appear to have been not brown enough. It should also be remarked that the bird was not necessarily completely moulted to winter plumage on October 7th. The difference in the colour of the bill at this date and on September 3rd may have been due to loose "flakes" about to be shed.—H.F.W.]

NOTES

SPOTTED FLYCATCHER LAYING THREE TIMES IN ONE NEST.

DURING the last week in May, 1934, a pair of Spotted Flycatchers (*Muscicapa s. striata*) built a nest in a cleft of a climbing rose tree growing against the wall of our house in Norfolk.

On May 31st this nest contained four eggs, which were taken.

On June 12th the nest contained a fresh clutch of five eggs, the first of which had probably been laid on June 6th or 7th.

Hatching took place on or about June 24th and all the young birds left the nest successfully on July 10th-11th.

On July 22nd the nest again contained two eggs, two more being laid on the next two days. Hatching apparently took place on August 7th, and by August 23rd the young birds had flown. No repairs were made to the nest during the whole period of occupation. H. J. K. BURNE.

COAL-TIT'S DOUBLE BROOD.

SINCE 1926 a pair of Coal-Tits (*Parus a. britannicus*) have annually reared a brood in a small hole amongst the partially exposed roots of a beech growing on the verge of a chalk hollow in a wood in north-east Surrey. It is impossible to see the nest as it is deep within the hole.

This year, 1934, young were heard in the nest on May 13th. Passing the spot on June 30th, and noticing one of the parents in the vicinity with food in its beak, I waited at a short distance, and again heard the cries of young when the bird entered the hole. I made a special point of visiting it on July 8th, when young could still be heard in the nest, but a week later they had flown.

This is the first time I have known the Coal-Tit to have young in the nest at the beginning of July, and I think it points strongly to a second brood. HUBERT E. POUNDS.

Records of second broods among the Titmice are decidedly scarce, so that the foregoing note is of considerable interest, though not quite conclusive, as it is possible that some accident happened to the young of the first brood before they left the nest. The fact that breeding again took place in the same hole, however, renders this unlikely.—F.C.R.J.]

DARTFORD WARBLER IN DEVONSHIRE.

On August 27th, 1934, in south Devonshire, I flushed a small bird whose species was unknown to me. The following notes were made on the spot with the aid of field-glasses: Small bird, dark brown on back, with long dark-brown tail, white feathers on margin. Under-parts reddish with white streaks at throat. Bill light brown. It uttered a note not unlike that of the Whitethroat when alarmed. There can be little doubt that the bird was a Dartford Warbler (*Sylvia u. dartfordiensis*), which has so far only once been recorded as breeding in Devonshire. S. Baron.

INCUBATION- AND FLEDGING-PERIODS OF WREN.

A pair of Wrens (*Troglodytes t. troglodytes*) began building a nest in my garden at Cumdivock, Cumberland, in the latter part of April, 1934, and on May 9th the nest held two eggs, and on the 14th there were seven eggs, the clutch that hatched out on May 30th giving an incubation-period of sixteen days. Five young were reared and left the nest on June 16th, fledging-period seventeen days. R. H. Brown.

[Previous observations on the incubation-period have varied from 14 to 16 days; while the fledging-period is usually estimated at 16 to 17 days (once 18, and twice 15 days). —F.C.R.J.]

YOUNG SWALLOWS ASSISTING IN BUILDING THE SECOND NEST.

A lady living in Cheshire tells me that a pair of Swallows (*Hirundo r. rustica*) built their nest at her house this year (1934) in such a position that she had an exceptional opportunity of watching them carefully at close quarters. About a week after the first brood of four young ones had left the nest it was noticed that they were assisting the parent birds to build their second nest. The young ones were definitely seen to alight on the ground in a yard, where they collected dry grass and other materials, and carried these up to the nest. This seems to be an unusual proceeding, and it would be interesting to know if others have ever noticed anything of the sort. A. Astley.

LATE PASSAGE OF SWIFTS IN SUSSEX.

In connexion with Mr. Bertram Lloyd's note (*antea*, pp. 172-4) on a late June migration of Swifts (*Apus apus*), there was at the same time a considerable movement on the Sussex coast near Winchelsea. On June 27th, 1934, in just over two hours, 240 Swifts were counted passing over westwards, following the coastline. Probably some were missed as observation was not continuous. They were first noticed at 11.15 a.m., immediately after three or four hours' heavy rain, and in the first ten minutes 160 had passed, the remainder following at intervals in parties of up to 16 in number. On the next day there was an even larger movement, again about noon; at one time about 200 birds could be seen in the air at once. These also were travelling westwards, but it should, perhaps, be pointed out that the direction (westwards) does not necessarily identify the movement as being a late spring one, for on August 6th Swifts were passing westwards nearly all day, and every autumn Swallows and Martins migrate both east and west along this coast. P. A. D. HOLLOM.

TAWNY OWL EATING NEWTS.

A friend of mine at Bristol has sent me two partly-digested specimens of the great crested newt (*Triton cristatus*) together with the following account, dated November 10th, 1934.

"I am enclosing two specimens—I think they are newts. A male Tawny Owl was picked up dead on the Abbots Leigh Road, Bristol, and I thought it emitted a peculiar odour. As I usually open all owls to see what they have fed on, I was surprised to find these. I have never found newts before".

I believe that newts have not been recognized on the menu for the Tawny Owl (*Strix a. sylvatica*).

W. A. SMALLCOMBE.

HOBBY BREEDING IN BRECONSHIRE.

ON September 12th, 1934, whilst in camp on the Radnorshire side of the Wye, a gamekeeper brought me an immature female Hobby (*Falco s. subbuteo*) which he had unfortunately shot some days before in some Pheasant coverts in Breconshire. He stated that a brood had been hatched off in one of the large tracts of woodland above this place. I was able to convince the keeper that the Hobby was quite harmless to game by showing him the stomach contents—only beetles—of the bird he had shot. He stated he would not shoot any more. J. G. WILLIAMS.

OSPREY IN RADNORSHIRE.

WHILE camped in September, 1934, on the River Wye, I heard rumours of a "sea-eagle" having been seen near Glasbury, but I discovered nothing to confirm these reports until a few hours before leaving for home on September 23rd. I was sitting in a car which was parked under some trees by the side of the Wye at Boughrood, when the sound of wings made me look up, and I was amazed to see an Osprey (*Pandion haliætus*) passing within ten yards. I was unable to judge whether it was an adult or a young bird, and as we had to leave the neighbourhood that day I was unable to follow it up. J. G. WILLIAMS.

LITTLE BITTERN IN SUSSEX.

ON August 17th, 1934, I observed a Little Bittern (*Ixobrychus minutus*) on the banks of a disused reservoir at St. Leonards-on-Sea. It was seen again in the same place on August 18th and 24th, 1934. The bird allowed of very close approach and a detailed description was obtained, from which I have no doubt that it was either a hen or an immature specimen of this species. On all three occasions the bird was observed at the water's edge, seemed very reluctant to take wing and, when it did, flew with rather slow, laboured flight across the reservoir to the opposite bank. The banks of the reservoir afforded no cover. K. P. KEYWOOD.

[It is, of course, possible that the bird was an escape from captivity.—EDS.]

PINTAIL BREEDING IN DUMBARTONSHIRE.

ON May 31st, 1934, while staying with Mr. Findlay at Boturich Castle, on Loch Lomond, I flushed a duck from a nest with seven eggs. She flew about fifty yards out on to a pool and I was able to identify her as a Pintail (*Anas a. acuta*). She duly hatched off and eventually one of the young was shot and sent to me.

I believe this is the first record of the Pintail breeding in the county. PHILIP RICKMAN.

DIVING OF THE SHOVELER.

IN *British Birds*, X. (1916), Abel Chapman described the diving for food of female Shovelers (*Spatula clypeata*) in a shallow pool at Cairo in 1913, and in Vol. XIII. (1919), Charles Oldham recorded an adult diving at Tring reservoirs. Though the young, like those of other surface-feeding ducks, doubtless dive freely, these appear to be the only definite records by British ornithologists of true diving by adult Shovelers. J. A. Naumann, however, long ago stated : " they only dive quite under the surface when in danger of their lives, if they have been robbed of the power of flight, or in play . . . ." (*Die Voegel Mitteleuropas*, Edn. of 1905, X., 130).

The following note of a glimpse of this habit which I obtained at Elstree Reservoir, Herts., may therefore be of interest. On June 6th, 1932, I noticed a pair swimming in shallow water off a marshy shore, behaving in a very excited manner. They appeared to be feeding eagerly, partly by snapping up the gnats and other insects which abound over the water there—a habit which has been noted in this species by J. G. Millais (*British Surface-feeding Ducks*, 1902). Every now and then one of them dashed across the surface for several yards, then, halting abruptly, rose out of the water poised on vent and tail, vigorously flapping its wings, after which it would suddenly subside.

During the quarter of an hour for which I was able to watch them closely, both male and female dived several times. I particularly noticed that they seemed to plunge obliquely under the water in a manner entirely lacking a Diving-duck's neatness ; but on each occasion they completely submerged themselves for several seconds. They were without doubt obtaining good food in the water or on the muddy bottom by thus diving, the pool being less then three feet deep at this spot. BERTRAM LLOYD.

FERRUGINOUS DUCK IN MERIONETHSHIRE.

ON November 9th, 1934, Mr. James Backhouse and I saw a male Ferruginous Duck (*Nyroca nyroca*) on a pool two miles north of Towyn, Merionethshire. We were under cover of a stone wall and had this Duck under observation for several minutes. We saw distinctly the white eye, and wing-bars, and when the Duck stood up in the water, the whitish underparts. I had previously seen one of this species, four or five years ago, on the same pool. E. H. T. BIBLE.

STATUS OF BLACK-NECKED GREBE COLONY IN FORTH AREA.

THE Black-necked Grebe (*Podiceps n. nigricollis*) continues to hold its own as a nesting species in the Forth area, as the following notes indicate. There is good cover at the loch where the Grebes nest, and the birds are shy, and do not confine themselves to one area, so that it is difficult to estimate their numbers.

I paid three visits to the loch early in July, 1934, and after the third visit concluded that at least five pairs of Black-necked Grebes were nesting.

On July 2nd I found two well-grown young being fed by both parents; a nest in a reed-bed containing one egg; a nest amongst sedges containing one broken egg, pierced and sucked; and five adult Grebes on the open water unaccompanied by young.

On July 7th nest one now contained three eggs, and in the same reed-bed were two more nests of the Black-necked Grebe containing clutches of three and two respectively. All these eggs were white and hardly at all nest-stained, and so were obviously fresh.

On July 9th a pair of the Grebes feeding three *newly-hatched* young.

These dates, taken collectively, suggest that there are at least five pairs of breeding birds.

A further point of interest was that within fifteen yards of the Black-necked Grebes' nests were nests of the Great Crested Grebe and Little Grebe containing c/3 and c/4 respectively.

WILLIAM SERLE (Junior).

[For previous notes on the status of the bird at this locality see Vol. XXIV., p. 174, and Vol. XXV., p. 308.—EDS.]

EMIGRATION OF LAPWINGS IN WINTER, 1933-4.

IN the last instalment of our articles on the " Movements of Ringed Birds ", we drew attention (*antea*, p. 137) to the large number of ringed Lapwings (*Vanellus vanellus*) reported from Spain in the winter of 1933-4. Observations made on the absence of Lapwings in this country at the time were also quoted.

In the same connexion we find some interesting notes in the Clifton College Scientific Society's " Ornithological Reports for 1933 " which have been sent to us by Mr. K. B. Rooke. It is here stated that the unusually cold spell in December caused an almost complete disappearance of Lapwings from the Bristol and Weston districts and from western Hampshire and eastern Dorsetshire. Interesting evidence from a keeper at Hengistbury Head, Hants, is quoted. He stated that between December 10th and 20th (exact dates uncertain) flock after flock of Lapwings passed overhead at short intervals and flew straight out to sea towards the horizon. With them were large flocks of Wood-Pigeons. The keeper's estimate that " millions " of Lapwings passed during those few days cannot be taken literally since probably no reliable estimate based on counts was made, but it certainly implies very large numbers.

Mr. H. G. Alexander kindly writes that in addition to the observations from his brother, already published by us, he thinks it worth while to note that during three days in the last week of December, 1933, in Kent, the only Lapwings he saw were four near Paddock Wood Station at a place where there are usually large flocks, and one near Lydd, the only one seen on Romney Marsh. Mr. Alexander adds that a few remained in the Birmingham district when the majority disappeared early in December ; but a little further west on the Staffordshire-Shropshire border, the flocks seen in early January were as large as in any other winter. Mr. Alexander suggests that the frost, being much more intense in the eastern Midlands, drew the Lapwings from there, but not from the western Midlands.

H. F. WITHERBY.
E. P. LEACH.

TEMMINCK'S STINT IN AYRSHIRE.

ON August 3rd, 1934, I was observing a little company of waders on the shore at Shalloch, about a mile south of Girvan.

The birds gradually approached so near that through my binoculars every detail of their plumage could be seen. Among them were Ringed Plovers, Dunlins, one Common Sandpiper and one bird which was undoubtedly a Temminck's Stint (*Calidris temminckii*).

The Sandpiper and the Stint were feeding close together and were identical in every respect except size, the Stint being considerably smaller. I watched it at close range for about twenty minutes.

On more than one occasion I have noticed that after violent storms some rare or uncommon bird has been met with. The day previously (August 2nd) there had been a violent thunderstorm with torrential rains, and the little River Doune had burst its banks and flooded the south end of Girvan. The rush of water finally breached the sea-wall and the next day (August 3rd) the receding waters left behind stretches of mud and sand which attracted hundreds of birds, chiefly gulls and waders.

WINIFRED BOYD WATT.

BROAD-BILLED SANDPIPER SEEN IN SUSSEX.

ON September 13th, 1934, on approaching one of the shallow pools at the Midrips, a small, Dunlin-sized wader rose almost at my son's feet from beneath the low bank, which had hidden it from us. As it flew away we at once saw that it had not the back colour-pattern of a Dunlin, as it lacked any white in the tail and had conspicuous dark and light markings down its back, so much so that my son at once remarked that this resembled the back of a Jack Snipe. It pitched on a nearby pool and here we were able to stalk it to within twenty yards and had it under observation for nearly ten minutes, when it rose and flew off inland and we lost it in the distance. Against the water and smooth mud of the pool its bill at once attracted our attention and confirmed what I had already surmised, that the bird was a Broad-billed Sandpiper (*Limicola falcinellus*). Examination through glasses confirmed the striped appearance of the back caused by the rather wide cream-coloured edgings to the long scapulars, but what surprised me to find was the really characteristic shape of the bill. My previous acquaintance with the bird had been on its breeding-ground with a broken-up background of moss, creeping birch and marsh grasses. Against this the shape of the bill had not impressed me greatly, but here against the smooth water and mud it proved most distinctive. About the same length as that of one of the longer-billed Dunlins or a Curlew-Sandpiper's, it was distinctly thinner as viewed from the side, but the smooth, gentle, downward curve of both these species was replaced by an angular downward kink at about the middle of its length. It seems that this must be much more apparent in life than in a dried skin.

Several other species of migrant waders were seen at the same time, including Knots, Curlew-Sandpipers, Greenshank and Golden Plover, but none of them in any quantity.

N. F. TICEHURST.

WOOD-SANDPIPER IN EAST LOTHIAN.

As the Wood-Sandpiper (*Tringa glareola*) is an uncommon visitor as far north as East Lothian, I think it is worth recording that I saw one at Aberlady Bay on September 24th, 1934.

My father was with me at the time, and we both recognized it immediately. The bird had all the action of a Sandpiper—restless, and jerking its tail repeatedly. We followed it about over the saltings for twenty minutes, and at times it allowed us to come within ten paces, and gave us an ample opportunity of studying it.

When it rose we took notice of the white of the upper tail-coverts, and the white tail barred transversely with lightish brown. The under-surface of the wing was not dark. The legs, seen in good light, were olive-yellow. When the bird rose it uttered a cry not unlike the Common Sandpiper. I may add that I know the bird well, having studied it abroad at its breeding-quarters.

The following day (September 25th) I found, amongst other waders, three Curlew-Sandpipers (*Calidris testacea*) and two Ruffs (*Philomachus pugnax*). Ruffs are not common at Aberlady at the autumn migration, and I have only two previous records. WILLIAM SERLE (Junior).

INCUBATION-PERIOD OF GREENSHANK.

ON June 5th, 1934, I found the nest of a Greenshank (*Tringa nebularia*) in Inverness-shire. It contained two eggs. On the 6th, at 3.30 p.m., there were still two eggs and no bird was seen. On the 7th, at 7.40 p.m., there were four eggs. The bird was not sitting nor did it run off, but when my companion and I had retreated it flew over the nest without alighting. On the 8th the bird was sitting closely. On July 1st, at 11.30 a.m., one young was hatched, two eggs were chipped and one young was dead in the shell. On July 2nd three young were hatched and were dry and active.

It is unfortunate that I did not visit the nest earlier on the 7th, but I had not expected the full clutch to have been laid.

Assuming incubation did not start until the 8th (evidently the bird laid late in the day) the incubation-period was twenty-four to twenty-five days. WINIFRED M. ROSS.

RED-NECKED PHALAROPE IN CARDIGANSHIRE.

ON July 10th, 1934, there was a specimen of the Red-necked Phalarope (*Phalaropus lobatus*) in the bay at Aberystwyth. It was an adult bird in full summer plumage. I had the chance of observing it fairly closely for a quarter of an hour, although it was very restless and unsettled in its movements. After flitting round, during which time it twice settled on the water close to me (20 yards off), it disappeared out to sea.

W. HASTINGS SMITH.

MORTALITY AMONG YOUNG COMMON TERNS IN LANCASHIRE.

IN BRITISH BIRDS, Vol. XXV., p. 135; Vol. XXVI., p. 168, and Vol. XXVII., p. 138, I published the percentage of dead among the ringed Common Terns (*Sterna hirundo*) in a north Lancashire colony. The tremendous death rate last year, due to numbers of visitors keeping the parents from sheltering the young from the sun, was not so great, as many visitors have not been permitted to visit this particular part of the colony. It would not have exceeded 6 per cent.

had not a " tripper " fired into the brown of the parents from a passing boat, on July 15th, killing at least twelve and no doubt wounding many more, in consequence of which many young died.

1929	Very hot	460	ringed.	Percentage of	dead	4.13
1930	Very hot	610	,,	,,	,,	4·87
1931	Cold and wet	355	,,	,,	,,	2.81
1932	Hot	549	,,	,,	,,	5·44
1933	Hot and dry	500	,,	,,	,,	12.0
1934	Hot and dry	879	,,	,,	,,	8.38

H. W. Robinson.

GREAT SKUA IN DERBYSHIRE.

On October 13th, 1934, at Sheldon, some eight miles south of Buxton, I saw a Great Skua. It was very tired and allowed me to get within a few yards of it, so that I was able to take specially complete notes, which I sent to Mr. Jourdain, who kindly confirmed my identification. The chief characteristics were the straw-coloured or nearly white shafts to the primaries, hooked blackish bill, short rounded tail, white on wings, heavy flight, brown plumage and large size. This is the first record for Derbyshire. William Shipton.

Little Bunting in Fife.—Miss L. J. Rintoul records (*Scot. Nat.*, 1934, p. 170) that she identified a Little Bunting (*Emberiza pusilla*) on April 12th, 1934, on a railway bank near Lower Largo. She was first attracted by the bird's note which she had heard before in the Isle of May. This is the first record of the bird's occurrence on the *mainland* of Scotland.

Snow-Bunting Inland in Essex.—Mr. E. T. Nicholson informs us that he saw a Snow-Bunting (*Plectrophenax nivalis*) at Banbury Reservoir, Walthamstow, on November 30th, 1934, and on the following day he and Mr. W. A. Wright saw one, probably the same bird, on King George Reservoir.

Willow-Tits in Radnorshire.—Mr. J. G. Williams informs us that when exploring the district of the Black Mountains in September, 1934, he occasionally saw a few Willow-Tits (*Parus a. kleinschmidti*), one of which he obtained and so confirmed his identification. The bird does not appear to have been recorded previously in the county. The Marsh-Tit (*Parus palustris dresseri*) occurs in the same locality.

Garganey Nesting in Kent.—Capt. G. E. Took reports that he found the nest of a Garganey (*Anas querquedula*) in the spring of 1934 in one of the north Kent marshes. It contained four eggs and the parent birds were seen at close quarters on several occasions. In *The Field* (21.vii.34) Mr. T. C. Gregory wrote that Garganey now nest, presumably regularly, in a locality in east Kent. Although there is a good deal of presumptive evidence that the Garganey nested on several occasions in north Kent prior to 1908, these appear to be the first published records of nesting in Kent outside the area of Romney Marsh, where it has long bred.

GREY PLOVERS IN HERTFORDSHIRE.—Mr. C. Oldham informs us that on October 25th, 1934, he identified two adult Grey Plovers (*Squatarola squatarola*) on a patch of mud at Startops End Reservoir, Tring. The species has seldom been recorded for the county.

BLACK TERNS IN WESTMORLAND AND LANCASHIRE.—Mr. A. Astley writes that as the Black Tern (*Chlidonias n. niger*) is rarely recorded north of Yorkshire and Lancashire, it is of interest to note that one was observed from October 7th to 10th inclusive, 1934, on Grasmere Lake, Westmorland. It spent most of its time hawking for insects over the reed beds, but on more than one occasion was seen to swoop down and snatch something from the surface of the water, apparently small fish, though it was impossible to be certain of this.

Mr. H. G. Alexander informs us that he saw three Black Terns over the water at Silverdale, Lancs., on October 13th and 14th.

PUFFIN IN SURREY.—Miss C. M. Acland informs us that a Puffin (*Fratercula a. grabæ*) was picked up alive and in good condition on October 20th, 1934, at Banstead, Surrey. The bird, which appeared to be a juvenile, was found within half a mile of the spot where one was found on November 1st, 1909 (see *Brit. Birds*, Vol. III., p. 231).

QUAIL NESTING IN KENT AND OBSERVED IN HAMPSHIRE.—In *The Field* (20.x.34) Mr. S. A. Smith published the photograph of a nest of Quail (*Coturnix c. coturnix*) containing eight eggs, that he found within nine or ten miles of Canterbury on August 23rd, 1934. It was situated close to a pathway in a field of growing barley, but was deserted on this being cut and the birds disappeared within a few days. This seems to be the first record of nesting in Kent for a good many years.

Major M. Portal informs us that a bevy of four Quail was flushed at Red Rice near Andover on October 24th, 1934.

COURTSHIP FLIGHT OF TEMMINCK'S STINT.—In the November, 1934, issue of *The Naturalist,* p. 244, the following graphic description of the courtship flight of *Calidris temminckii* is given by Mr. George Bolam :—

" During courtship, both sexes may be seen indulging together in a most fascinating butterfly-like circuition, at no great height in the air, the male venting his ecstasy in a weak but pleasing song, somewhat reminiscent of the trill of a Dunlin, but differing from it in that, in place of a steady rise in cadence, it softly rises and falls three or four times before coming to a finish. With stiff and motionless wings held high above his back he then planes slowly down to earth, reminding one very much of a Red Admiral or other large butterfly. The trill may be continued from the summit of a stone or hummock, or even from a post should one happen to be handy ; or the minstrel may recover his flight and mount again into the air to resume his singing on the wing ".

It is with the greatest regret that we see in an editorial note appended to this article, that this grand old naturalist died suddenly on October 25th, at Alston.

LETTER.

THE GRASSHOLM GANNETS.

To the Editors of BRITISH BIRDS.

SIRS,—Messrs. H. Morrey Salmon and R. M. Lockley, in their paper on " The Grassholm Gannets—A Survey and a Census " (*antea,* Vol. XXVII., pp. 142-152) appear, in their historical survey of the colony, to have overlooked a paper dealing with the colony by the late F. M. Ogilvie, and published in his posthumous book *Field Observations on British Birds.* This paper, entitled " Gannets and Cormorants ", was one of a series of eight lectures delivered before the Ashmolean N.H.S. of Oxfordshire, between the years 1902 and 1916. F. M. Ogilvie does not state what year he visited Grassholm, but he mentions that Puffins, Guillemots, Razorbills and Kittiwakes were also breeding there. He estimated there were 200 to 250 pairs of Gannets breeding, whilst he makes the following interesting remarks concerning the immature Gannets :—

" Grassholm is, I think, remarkable for the presence and number of these young birds. It is an almost universal rule that breeding birds drive the immature birds of their own kind away from their nesting places, and never allow them in the neighbourhood at all. Here, however, quite 20 per cent. of the total number of Gannets were non-breeding birds ".

R. H. BROWN.

REVIEWS.

Quest for Birds. The Problems and Pleasures of an English Bird-Watcher. By W. K. Richmond. (Witherby). 7s. 6d.

ORNITHOLOGY would be a dull subject if it were not constantly being enlivened by the impact of fresh minds and fresh points of view, and this original and stimulating book will give pleasure to seasoned as well as to new and inexperienced bird-watchers. Mr. Richmond's name is hardly familiar among ornithologists yet, but it evidently will be, if the promise of this first excursion is fulfilled. As a substantial proportion of his space is given to criticisms, express or implied, of my own work I cannot attempt to review this book in the orthodox manner, and propose, with the editor's approval, to put down my personal reactions to it.

One of Mr. Richmond's most emphatic opinions is that the collection of scientific data about birds, and census-taking in particular, have no more value or justification in themselves than simply watching birds for the æsthetic pleasure which it gives. As a notorious census addict let me say that I entirely agree, and that I am very far from holding the view which the author appears to impute to me of neatly-tabulated data as the main or even the only objective of field observation. Of such data I have already written in the final passage of my *Art of Bird Watching* :—

> " . . . these, of course, represent simply the dried husks with which the bird-watcher has no more to do. For those who practise it bird-watching is not only a sport and a science, but also something near a religion, and after all its externals have been inventoried the essence stays incommunicable ".

I would go further and say that valuable as census work has been and will be there is now a real danger of its being overdone to the detriment not only of other particular aspects of observation, but of what is even more important, a healthy balance and variety of observation as a whole. Although Mr. Richmond seems to have marked me down for the part of the narrow-minded scientific observer who cannot admit the value of other points of view, I would like to associate myself with his plea, which is the keynote of this many-sided book, for the utmost variety of points of view as the only way to a vigorous and healthy ornithology.

Mr. Richmond also gives a chapter to somewhat detailed criticism of the " Balance of Birds ", which appeared in my *Birds in England*, a book published almost nine years ago, and long since remaindered. At that time knowledge of bird population was so much less advanced that the background and standpoint from which this study was made are now obsolete. It would be easy in the light of subsequent knowledge to correct the picture ; we are now able to replace a number of guesses by facts. While in some instances I believe Mr. Richmond's arguments regarding individual species to be justified. his general argument that the bird population of England " is a mere remnant " of what it used to be in the Middle Ages could hardly be sustained in the light of recent work on bird population, which the author almost entirely ignores. Much of Mr. Richmond's criticism is due to a failure to appreciate the sense in which the term " balance " was employed. although it was made clear at the outset (*Birds in England*, p. 26) that the definition used was of a balance-sheet or profit and loss account, and not of a precise equilibrium.

In view of Mr. Richmond's preface it is, perhaps, unfair to him to criticize in detail his chapter on territory, nor does space permit. While there is an element of truth in his attack on generalizations he does not carry the subject much further by himself delivering a series of generalizations far more sweeping and indefensible than those which he rejects. I suspect that he makes no distinction between a theory and a dogma. There is nothing wrong with theories as such ; the trouble starts when we elevate them to the status of dogma. In fact, no one can write about birds without a theory, conscious or unconscious, as the theory-hating Mr. Richmond proves on every page—a particularly good example is his chapter on nesting-birds, when he directly follows up a violent attack on the territory theory by an account of breeding activities which is coloured through and through by the theory he has just been denouncing.

Given a rather more restrained style and a better appreciation of his own gifts and shortcomings, which are both considerable, Mr. Richmond will write some first-rate books. Already what he writes is alive and moving and he knows how to describe vividly the things he sees :—

> " . . . Corn-Buntings fly clumsily with legs dropped : Redshanks hover in the air and glide to the earth with outstretched wings as they trill : Black-tailed Godwits come shooting earthwards, slipping and turning from side to side ",

There are plenty of passages in this book which show that, whatever powers Mr. Richmond may develop later on, it is as a descriptive writer that he has the greatest natural talent. This is fortunate, because the ranks of bird-watchers who can describe what they see really well are thin, and because here is obviously a man who is on the way to creating a direct individual vision of bird life which we must look forward to sharing with him.—E. M. NICHOLSON.

Scolt Head Island. Edited by J. A. STEERS, M.A. (Cambs.—Heffer). Illustrated. 15s. net.

THIS book is made up of a number of papers by specialists. Dr. S. H. Long tells us how the island was secured for the National Trust and sets out the regulations ; the editor gives a short history of the name and describes how the island was formed and the changes that have taken place. Then follow papers on the botany, petrology, ecology, marine invertebrates, non-marine mollusca, a short list of half a dozen mammals and a chapter by Miss E. L. Turner on the breeding birds with a few notes on migrants. As is well known, Miss Turner acted as watcher on the island during the summers of 1924 and 1925, by no means an easy or a comfortable task. The breeding birds are few in species. Common Terns, though fluctuating, are the most numerous, and have greatly increased. The Sandwich Tern, which first nested in 1923, varies greatly in numbers, there being in some years over 600 pairs and in others not more than a score, and it is always uncertain if they will occupy this island or resort to Blakeney Point or Cley for breeding. The Little Tern has a number of small colonies and is increasing. A pair of Roseate Terns breed intermittently and in 1930 there were two pairs. Ringed Plovers are common and the Oyster-Catcher has increased from seven breeding pairs to thirty-eight. There are a few Lapwings, a good many Redshanks, many Sheld-Ducks, an occasional pair of Short-eared Owls, and some Black-headed Gulls. In one nest of the last Miss Turner found the remains of nine nestling Common Terns on one morning. This raises the problem as to whether one species shall be protected against another in such a " sanctuary " or whether a Common Tern is to be regarded as of more interest or value than a Black-headed Gull ! Of nesting Passeres there are only Meadow-Pipit, Sky-Lark, Linnet, Pied Wagtail, Wheatear, occasionally Yellow Wagtail and, since the erection of huts, four pairs of Swallows. Miss Turner gives interesting details of the breeding birds (especially the Terns), but only a short general account of the migrants, which is rather disappointing.

There are several excellent photographic plates of birds and the whole book is full of interesting plates and charts, many of them folded in and so bulky and insecure, and so awkward to consult, that one wishes a quarto size had been adopted for the book, which would have largely overcome the difficulty.

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CONTENTS OF NUMBER 8, VOL. XXVIII., JANUARY 1, 1935.

PAGE
On the Display, Nesting and Habits of the Sheld-Duck. By Henry Boase 218
A Fly Parasitic on the Swallow. By A. W. Boyd 225
Excavation of Nesting Hole and Incubation of the Crested Tit. By Miss W. M. Ross 226
Lapland and other Buntings on the Pennines in Winter. By John Armitage 230
The Skins and Eggs of the Great Auk. By the Rev. F. C. R. Jourdain, M.A., H.F.A.O.U. 233
Recovery of Marked Birds 235

Notes :—

Diving of the Shoveler (G. W. Temperley) 241
Long-tailed Duck in Hampshire (M. Portal) 241
Slavonian Grebe in Inner London (E. G. Pedler and Dr. G. C. Low) 241
Cream-coloured Courser in Norfolk (H. H. Edwards)... ... 242
Arctic Skua in Berkshire (J. D. Wood)... 242

Short Notes :—

Breeding Range of the Brambling. Probable Nesting of Red-backed Shrike in Mid-Lothian. Chiffchaff in Northumberland in November. Dartford Warbler in Devonshire. Grey Phalaropes in Sussex, Leicestershire and Somerset. Great Snipe in Hampshire. Black-headed Gulls Nesting in Trees in Sutherland. Iceland Gulls in Inverness-shire, Renfrewshire and Edinburgh. A Flock of Razorbills in Middlesex 243

Review :—

Birds of Great Britain and their Natural History. By W. P. Pycraft 245

Letters :—

Pintail Breeding in Dumbartonshire and Hand-reared Birds (J. A. Anderson) 246
Territory in the Great Crested Grebe (E. M. Nicholson) ... 246
Some Reflections on Territory (B. W. Tucker)... 247

P

ON THE DISPLAY, NESTING AND HABITS OF THE SHELD-DUCK.

BY

HENRY BOASE.

THE writer has at intervals published notes on the commoner British ducks. During the work on these other species, notes on Sheld-Duck (*Tadorna tadorna*) have been collected, and in some respects these are of interest.

As in the other notes, the data given refer to the findings on the north-eastern portion of the Tay Estuary, which, although partly margined by the city of Dundee, is still the haunt of shore birds in substantial numbers.

Among the various forms of display used by Sheld-Duck, some have been found to possess interesting resemblances to those of the geese, notably the " salute ", to be described, its usual display on land, and its attitudes of attack and menace. Otherwise its behaviour recalls that of the surface-feeding ducks, with the exception that there appears to be comparatively little of the endless swimming to and fro and wheeling so characteristic of, say, Mallard and Teal. Owing to the few opportunities which have arisen during autumn and early winter to study the behaviour of Sheld-Duck, no very definite information as to the extent of display at that time is available. One or two of the few records seem to suggest either autumn display and mating, or that some pairs continue in being beyond the breeding-season, as seems to be the case with Mallard.

As has been found with some other ducks, when excitement is rising in a group, a " rest-intent " attitude is sometimes seen—a swimming position with the head held higher and the neck less curved than the normal rest attitude, with the black feathering of the hind neck definitely expanded, showing as projecting over the white portion of the neck. (This projection of black over white was seen in Goldeneye in like circumstances). The raising of the nape plumage is either not a regular feature, or the usual conditions of observation make it difficult to see—a background of water or rippled mud may well mask the effect.

The most characteristic form of the display of the Sheld-Duck is the " salute ". It appears to be directed to other males rather than to the females and, used with other forms, has been seen only in the earlier part of the spring. Generally this display is as follows : The swimming bird extends the neck rather stiffly upwards, and, with deliberation, swings the bill upwards until head and neck are in line, and down again. The pause in the "in line" position is about one second. The movement may be repeated up to three times with a few seconds' interval between each salute. So far as can be made out, no call is associated with this display.

While the display just described has a goose-like touch about it, the Sheld-Duck uses a display recalling certain Mallard forms. One of these is as follows: From a rest attitude, head and neck are extended in line at a steep angle upwards, a moment's pause, a sharp retraction of the neck and an upward swing of the rear portion of the body, and a resumption of the normal swimming attitude.

Following the display just described, and of other similar forms, also when a male of a pair returns to greet its mate, a form of bow is used. This bow is, perhaps, the most frequent of the various actions of the male Sheld-Duck in display to its mate and is given long after the other forms have been forgotten for the year. It evokes from the female an entirely different form of action which will be described. The action of the male starts from a normal attitude with an upward and backward swing of the head, the bill held normal to the neck, and in its furthest position not rising more than thirty degrees—following through in a forward and downward motion. The action may be repeated up to half a dozen times, and sometimes, at least, is accompanied by a soft, whistling call "*quee-o*" or "*whee-o*". Sometimes the action is so vigorous that the body swings with the motion of the head, so that, while afloat, the performer rises on the water, in the upward stroke, and settles on the down stroke.

Another Mallard-like form of display was seen on February 26th, 1928. From the "rest-intent" attitude described (the head-feathers were raised in this instance) the bird bowed so that the bill pointed downward, rose on the water with arched neck and raised head and neck with an upward and backward swing till the neck was fully extended and the bill pointed upwards at about sixty degrees. After a momentary pause, the bird subsided on the water, and in some cases following on, gave the bill-toss display already described (generally three tosses) before returning to the rest attitude.

Perhaps the most elaborate display seen was that given by a male in a group of five on March 30th, 1924. It consisted of a rapid forward and backward motion of the head, the neck being extended at about forty-five degrees and then retracted (bill in line with neck), done with so much energy as to produce an upward swing of the tail, a quick recovery with bill, head and neck extended in a vertical line, the bill brought horizontal once more and tossed once or twice, and then the return to a normal swimming attitude. The whole action was very rapid. At times only the first portion of the display —the upward and forward swing—was given in several repeats, with so much energy as to cause the bird to rise on the water as the head swung back with retracted neck. On this occasion the salute was also given alone without any preliminary display.

A variation of the form just described was seen on April 13th, 1931, during a dispute between two pairs. In this instance the active male rose on the water from the " rest-intent " attitude, at the same time extending the neck so that for the moment head and neck in line were parallel with the water surface, followed immediately by a swing upward until head and extended neck were in line vertically. This attitude was held for an appreciable time and, in one instance, the salute was given as the bird settled on the water.

One form of greeting between male and female has been described, that used by the male. The behaviour of the female in response is quite different. She greets the male with head and neck in horizontal line, the level so depressed that the head is well below the level of the back and makes a scooping motion with the bill—rather a slow action—and, while doing so, gives the " *ak-ak-ak* - - - " trill. The male may give this " scoop " display while approaching his mate, and when she does likewise, he changes at once to the " swinging bow " greeting and the usual male call. So far as can be determined the female does not give the " swinging bow " greeting.

The " scooping " greeting described seems to be a development of the usual act of menace used by both birds—the general attitude is the same but the scooping motion is not given. The attacking bird may merely run or swim towards the intruder with outstretched neck, or the head and neck may be swung up and down through, say, fifteen degrees (the highest point will not exceed thirty degrees from horizontal) with or without a sideways swing as well. As a last variation, the sideways swing only may be given, and, particularly on water, the action makes the bird turn from side to side—the outstretched neck almost touching the water—so making a behaviour very like that of the Great Crested Grebe when giving general defiance in the middle of open water. It is not clear to the writer that this action is confined to the male—it recalls a motion of the female Mallard when seeking the attention of interested males—and may be used in like manner by the Sheld-Duck.

There is a variation of the bow-greeting of the male sometimes given where the motion is reduced to a to-and-fro nodding motion of the head.

During the period of courtship, Sheld-Duck quarrel energetically and later, when pairs meet on the flats, the intruders are driven off with great vigour, although the feeding grounds are more than ample for the pairs using them. This quarrelling goes on until mid-May at least. When afloat, fighting birds may splash the water high, and the offender may dive to escape punishment. Once two individuals were seen to collide deliberately in mid-air and both fell with a splash into deep water, in which they were submerged for several seconds.

In another instance, on May 20th, 1923, a single bird alighted beside a pair feeding on the flats. The male of the pair immediately rushed at the intruder with head down in the "menace" attitude, calling the harsh "*ark-ark*" note, and on meeting the birds seized one another at the hinder portion of the base of the neck and appeared to try to force one another backwards, using the opened wings to give additional purchase. Finally the stranger broke away and took to flight pursued by the other, which, having chased the intruder from the vicinity of his mate, returned and alighted near her. She immediately approached giving the "scooping" greeting, calling the "*ark-ark*" note while the male replied with the dipping "bow" greeting and the "*whee-ee*" note.

Calls vary a little in harshness. At night in spring a running "*ak-ak-ak-*" is usual from feeding birds on the mud. During the excitement of anger and courtship the call is often more harsh—"*ark-ark-* - -" and the male uses a soft "*whee-whee-* - -" or "*whee-o*"—accompanying the dipping swing with which he greets his mate. So far as has been noticed, this call is used by the male only. The male may lead the female (or the female the male) in a walk over the flats—the male dipping and calling—the female "scooping" and calling "*ak-ak*", or the more general behaviour may be given while swimming. The writer has a note of a call "*week*" used in these circumstances, apparently by the female, but has not noticed this call in later watching. When one pair comes too near another feeding near by, or alights from flight in the immediate vicinity, the pair in possession may attack the new arrivals—male advancing on male, female on female, ending in general with a rush by the male with head and neck outstretched and calling "*ark* - -" at the intruding male, while his mate deals rather less vigorously with the other female. During one such attack, when three pairs were present, the dispute lay between two pairs only, and the advancing male used the display described above as seen on April 13th, 1931.

As to the dates of display, the records available for the Tay Estuary give mid-January as the start, with comparatively little real action after the end of April. There is only one record of display during the autumn and winter, for October 25th, 1924, and the actor was either immature, or more likely in eclipse. The bird gave the " bill-toss " form while swimming with about twenty-five others, both adults and young of the year, and the display was over before the actor could be picked out. There are one or two records for couples seen during October and December and early January, but it could not be established with certainty that these were real pairs. Commonly, most of the birds present at the end of February are already paired. In this connexion it is worth mentioning that in the writer's experience many males show little or no sign of the knob at the base of the bill during the earlier part of the spring at least, and that in consequence the definite identification of the males has not always been possible. In the two cases of the pairs seen in attendance on young in June and July, it was again found that the knob was absent.

The presence on mud-flats and off-shore of pairs at all times of day during the early summer suggests that a large proportion of Sheld-Duck may fail to nest or lose their eggs. The number of broods noticed is very small compared with the numbers of pairs present, and the comparative number of single birds seen feeding is also small. From the few records available the evidence points to normal behaviour during incubation—that is, a period during the afternoon (and probably in the early morning) when the sitting female leaves the nest for feeding and bathing. The male visits the nest and accompanies the female to feed, returning with her to the nest and again coming back to the shore. On the other hand, the conditions of nesting in a burrow may enable the sitting bird to leave the eggs for comparatively long periods, and feed with its mate on the flats during the ebb. The comparative scarcity of broods may be due to the same reason as with Eider—an immediate departure to feeding grounds suitable for the young. In the Tay Estuary the fringe of the reedbeds of the upper estuary may be the resort, as at a later date full-grown young are seen on the flats beyond.

As is usual with Sheld-Duck, pairs nest far from the estuary. Some, at least, march with the young (both parent birds have been with the brood on the few occasions when this hazardous trip has been watched) to the estuary. In two cases broods were reared on an inland loch (Lochendores, 1922-1923). In 1922 a brood of six and both parents were seen on July 15th; a pair had been present there on the 12th. The young were in down, and five were diving steadily (10-15 seconds), while the sixth up-ended like the adults. The parent birds were still in attendance on July 17th. On August 10th only five young and one adult (by then dull) were seen, but one duckling still up-ended, while four dived. Only three young were present on August 19th, two on August 28th, and these had gone by September 20th. Unfortunately the notes then made are silent as to feeding behaviour. In 1923, on June 29th, a pair with at least three young in down were seen, and all the ducklings were diving freely. There was also a solitary adult present, and on the previous visit on June 13th a pair and one adult had been seen. The adults of the pair both remained until July 27th at least, and had departed by August 5th. On the former date the young were almost full-fledged, and two were diving, the third up-ending, while, in the later date, only one young bird was diving. The three juveniles remained on the loch until some date between August 20th (present) and 30th (absent).

These records indicate the unusual feature in duck of both adults remaining in attendance on the juveniles for some time after hatching. While, in 1922, there is a record of one adult only remaining about four weeks, the eclipse and moult would hasten the departure of the male. There is also the peculiar feature of the feeding behaviour of the young. The character of the loch itself had nothing whatever to do with it, as shallows suitable for surface-feeding duck were more extensive than the areas of deeper water, and lay literally within a few yards of the deeps. No further opportunities have arisen for observation of other broods on this loch, although in 1925 a pair had a nest near the loch as shown by the departure of a pair, and the return of one bird within two minutes; no young were seen later. Notice that the diving of the juveniles continued until full-grown in at least one case in 1923, and that in both broods the ducklings had the example in feeding behaviour of the two parents to guide them (if guidance be necessary).

The records for Sheld-Duck in the Tay Estuary during the past years show some points of interest, and perhaps throw some light on its general behaviour. It is apparently a summer visitor, and records during the autumn, and early winter, are relatively few. As a summer visitor the first arrival in spring is usually in the last week of January, or the first week in February. The main arrival is rather later—from mid-March, and the average numbers are in by the second week of April. There is some suggestion of other arrivals in early May as shown by the occurrence of parties at this time, and by marked irregularities in number. July records indicate definitely a withdrawal, so that only a few, say 10 per cent., are still present in the last week. So far the writer has no indication of where the Sheld-Duck goes to at this time. Presumably it retires to moult, but there is no sign of it on salt-water in the Tay Estuary, inland on fresh-water, nor has it been noticed on the sea off the coast. There are sundry records covering the remaining months of the year which suggest two things—first, that a few individuals are present throughout the year (whether the same at all seasons is not certain) and second, exceptionally, parties of some size may spend the autumn and early winter in the estuary. These parties, when it has been possible to examine them, have consisted for the greater part of young birds of the year; only 5 per cent. or so seeming adults have been noticed. This separation of the juveniles seems an unusual feature among ducks, and may indicate that some, or most, do not breed in their first summer, which in turn would explain the appearance of ill-knit parties in early summer (May) and of single birds summering apart (Lochendores, 1923). The parties have so far always broken up during December, and so made no obvious impression on the spring arrival dates.

Sheld-Ducks have been found regularly at two lochs on high ground at about 800 feet. At one of these, in recent years, birds have been seen there as early as the third week of February on two occasions, the first week of March on two occasions, once mid-March, three times in the second week of April, and once in the third week of April. In other words, the birds may pass almost immediately even to inland nesting areas on arrival in the estuary.

The records of numbers suggest a considerable increase in the upper Tay Estuary during recent years, perhaps in part due to the gradual afforestation of Tents Moor on the eastern coastal region of Fife, and consequent shift of habitat, but almost certainly in part real.

A FLY PARASITIC ON THE SWALLOW.*

BY A. W. BOYD.

DURING the enquiry, under the auspices of the British Trust for Ornithology, into the size of broods of the Swallow (*Hirundo r. rustica*), it has been found that the larvæ of one of the blue-bottle flies, *Protocalliphora caerulea* R.-D. (also known as *Phormia sordida* Zett.), are parasitic on nestling Swallows in widely separated localities. Séguy (1928), *Encly. Ent.*, IX., p. 164, so Mr. G. B. Thompson informs me, records having taken the larvæ of this species from the nests of Swallow and Martin (*Delichon urbica*), and it appears that it has been recorded from the nests of other birds, but it is difficult to know exactly the species referred to by some workers, owing to the complexity of the names employed.

The larva has a series of small hooks round the first segment with which it attaches itself to the nestling; when full-fed it is of considerable size and its skin is densely covered with short stiff spines which are visible to the naked eye; they are thus unlike the ordinary maggots of many flies and, as Mr. Britten has shown me under the microscope, these spines can still be distinguished in the pupa, and make it possible to identify empty pupa cases with certainty.

Mr. H. Britten, of the Manchester Museum, has received larvæ and pupæ from several localities. The first larva was sent on July 3rd, 1934, from Kelling, Norfolk, by Mr. R. M. Garnett, who found it attached to a corner of the gape of a nestling. On August 2nd, at Whitley, Cheshire, a full-fed larva fell from a nestling I was ringing, and Mr. Britten bred the fly out on August 20th. On August 15th, after the young had flown, I removed the nest-lining, and from this a dozen more flies were bred. A nest-lining sent in August by Mr. J. F. Thomas from Laugharne, Carmarthen, contained three pupa cases; the young were ringed on August 8th, and on August 24th one of the young was found dead. Other material sent by Mr. J. C. S. Ellis from Edgerton, Huddersfield, Yorkshire, contained numbers of pupa cases, and other nests containing empty pupa cases were sent to Mr. G. B. Thompson at the British Museum by Mr. A. Mayall, from Woodbridge, Suffolk.

It is obvious that these blood-sucking larvæ will tend to kill off some of the nestlings—in the nest I have mentioned only two nestlings survived—and that their prevalence may materially affect the size of the broods and account for the broods of one or two young that are often reported.

It is hoped that observers will send in linings from nests next year both where broods are unusually small, and also normal.

*Publication of the British Trust for Ornithology.

EXCAVATION OF NESTING HOLE AND INCUBATION OF CRESTED TIT.

BY

WINIFRED M. ROSS.

In 1933 Mr. D. Stubbert and I made observations of twenty-two nesting-holes of the Scottish Crested Tit (*Parus c. scoticus*) in Abernethy Forest, Inverness-shire. Two of these were rather high up in apparently healthy trees and these I did not examine closely. The remaining twenty were situated as follows: Four were in natural holes and, so far as I could judge by their old appearance, were quite untouched by the birds; three were in natural holes, which had been made deeper by the birds themselves; six were in very rotten trees extensively probed by Great Spotted Woodpeckers, and probably the Tits had used these partially-made holes as a start; one was in a hole where a Great Spotted Woodpecker had nested the year before; one was between the bark and the stump, a very shallow hole such as is often used by a Creeper; one was in a rotten root underground, and this was probably excavated by the bird; one was in a fairly stout fence-post, part of which had become rotten before the birds started to work on it; the other three, in very rotten stumps, were, so far as I could find, entirely excavated by the birds themselves, and in two of them the entrance had been made where a piece of bark had fallen off, thus making the start much easier.

In 1934 we had an excellent opportunity of watching boring operations from the beginning. The site selected by the birds was a very rotten stump about 3 feet high. At a point, 1 foot 9 inches from the ground, there was a small broken branch which fell out when touched, and in this spot we made a little opening with a penknife. This was 2 inches high, 1½ inches broad, and less than half an inch deep, and really did no more than remove the outer harder part of the wood.

A pair of Crested Tits were working in a tree near; they were obviously having great difficulty in making a hole, and I believe it was these birds which transferred their attentions to the stump. They adopted the entrance we had made without any subsequent alteration.

Work was begun about 1 p.m. on April 29th and continued actively until 6 p.m. For the next five days excavation continued until a depth of 7½ inches was reached, and here, where a ring of small branches had grown, evidently more solid wood was encountered.

Work was carried on most actively all the morning, and again in the evening between 5 and 7, while in the afternoon the bird would work for five or ten minutes, and then be away for three-quarters of an hour or more. All the work was done by one bird, and this we judged by attitude, notes and behaviour, to be the female. She was sometimes in the hole as much as five minutes, sometimes only twenty to thirty seconds. When she came out she always carried a piece of wood varying in size from tiny chips to bits over one inch in length. These were invariably carried to a group of small rowan trees about three yards from the stump and dropped; the bird wiped her beak on the branch and flew back to the hole. As she got down to harder wood, the noise of her working could be heard from about twenty-five yards.

The male bird did not seem to take any part in excavating, but he was always near the nest, and frequently perched on the edge of the hole and looked in. Sometimes he entered the hole but did not remain more than a few seconds, and never carried out any chips. He often brought a beakful of insects to the hole, sometimes feeding his mate at the entrance, sometimes in the hole, and occasionally on a bush just beside the stump. Once or twice he came with food when the female was absent. On these occasions he looked into the nest, called loudly, and finally ate the food himself.

On May 4th the bird was still working hard carrying out chips as late as 7.15 p.m., but on the next morning, the seventh after excavation had begun, nest-building was started. The female plucked large bunches of moss—nearly as large as her head—from an old wall, and from the foot of the rowan trees. She frequently picked out several pieces and rejected them before getting exactly what she wished. When she had a beakful she flew directly to the hole. The male flew round, pecked at pieces of moss, but always dropped them, and was never seen to take any to the nest. He frequently, however, entered the hole with his mate.

The next day, May 6th, there was heavy rain and wind, and the birds were not seen near the nest from 10.30 a.m. till 2 p.m., when watch was given up. There was a dry, sunny interval at 4 p.m., and the female was seen bringing sheep's wool to the nest. She carried it to the rowan trees and teased it out into a large fluffy mass as big as her own body. She worked at it furiously, holding the wool in her claws and pulling it upwards with rapid jerks of the head, then, reversing her position, hanging head down and pulling the wool down and from side to side. The following day she was noted bringing more sheep's wool, which she teased out, also some grey fluff and some pale brown, soft material, like wood-wool, which she seemed to get from high up in a Scots pine tree. She also brought some white down and one or two small feathers. The male was very attentive, flying with her on each journey, waiting outside in the bush, and looking in frequently. On one occasion he was sitting on the edge of the hole when she returned, and she perched on his back, and entered the nest over his head.

For the next three days the hen continued to build as before but gradually brought in more feathers and less wool. The feathers were all white fowl's feathers and were brought from a distance of over 100 yards.

On May 11th the birds were not working or seen in the vicinity of the nest all day until 4 p.m., when the male appeared calling a note I have never heard before. There was no trill, only four single, rather hard, notes, with the second accented ; the notes were loud for a Crested Tit. The male kept fluttering from the rowans to the bush and stump, constantly looking into the hole. The female was feeding on the ground near, and occasionally trilled softly in reply, but continued feeding.

Six days were thus occupied in excavation, six in nest-building, and apparently the thirteenth in resting, while on the fourteenth, viz., on May 12th, there was one egg in the nest at 9 a.m. The birds were seen near the nest and a few minutes later the female, accompanied by her mate, brought fine rabbit fur to cover the egg. Both birds then left the nest and were not seen again near it that day except for a short time at midday and about 5 p.m. On the following day there were two eggs well covered, but faintly visible. On the following three days the eggs were all covered and could not be seen. The bird was not sitting and was not seen near the nest.

On May 17th, the sixth day after the first egg was laid, the female was seen to enter the hole at 10 a.m. with a large moth in her beak, and she did not come out again. Watch was given up at 11.30 a.m., but the bird was still sitting at 2.30 p.m. and 7.30 p.m.

On May 30th, this being the fourteenth day of incubation, three eggs were hatched at 8.45 p.m., while two were not hatched. At 9.30 p.m. the fourth bird was emerging from the egg, and on the next day one egg was still unhatched, and was found to be infertile.

Both birds were very pugnacious towards other birds, especially Willow-Warblers, Blue and Great Tits. Later on a female Goldcrest, which was selecting moss from the same wall as the Crested Tit, was vigorously chased each time she came. On one occasion a Great Tit arrived and perched on the stump while she was teasing wool on the rowan trees. She chased him with the wool flying from her claws like a flag. It ultimately dropped and she never picked it up again. She did not pay any attention to a female Bullfinch, which was feeding on her group of rowans for over an hour one day, and only occasionally and half-heartedly chased a cock Chaffinch which often sang quite near the stump.

[Miss Ross has most kindly sent me the stump for examination. The wood is so rotten as to be crumbling to pieces. The nesting cavity is very roughly excavated and has no regular shape. The bird evidently pecked out the very rotten parts and left the harder ones, which stand out in uneven ridges. The diameter of the cavity is approximately two inches, and of the stump itself, five inches. This nesting cavity is thus very different from the neatly bored and definitely shaped one made by the Willow-Tit.—H.F.W.]

[The observations on the share of the sexes in excavating and nest building appear to be the first made on the British race of the Crested Tit, but agree closely with those of Herr L. Schuster and Baron Geyr von Schweppenburg on continental races.—F.C.R.J.]

LAPLAND AND OTHER BUNTINGS ON THE PENNINES IN WINTER.

BY

JOHN ARMITAGE.

THE autumn and winter of 1933-34 were abnormally dry, and conditions were ideal for work on the uplands, particularly those areas covered with moor-grass. During a normal season the tussocky ground is wet and sometimes waterlogged. Moor-grass (*Molinia cærulea*) is a perennial of great strength and tenacity, dominating large tracts of the Pennines, excluding other plants and successfully resisting wind, flood and fire, besides carrying, without apparent ill-effect, a host of gall-midge larvæ (*Cecidomyidæ*) at its base.

Birds—fourteen species at least—feed on the seeds of moor-grass, and later, being aware of the myriads of larvæ in the plant's haulms, they peck into the tussocks, shredding the sheaths and eating the vegetable core and clusters of maggots. A bumper crop of seeds fell in the autumn of 1933, providing an abundant food supply for the birds ; therefore, uprooting of infested haulms was less noticeable and the tracing of Snow-Buntings (*Plectrophenax nivalis*) proved exceptionally difficult. My wife and I averaged three days per week in the hills, but the season's bag of " Snowbirds " only amounted to seven—odd birds in four different localities. Other observers were more fortunate, and we received full details of the birds seen by T. Baddeley, A. E. Baron, T. Bell, A Bellfield, F. Brindley, J. J. Cash, R. Clapham, H. Horsfall, R. E. Knowles, W. Shipton and F. Taylor. I. Whittaker searched many E. Lancs. haunts of Snow-Buntings, but without result.

Altogether, the season's reports involved six counties. First arrivals were noted on October 17th, and the last were recorded on March 3rd. R. E. Knowles, long associated with the E. Cheshire hills, states that the Buntings are regular winter visitors there, and my experience in the High Peak and N. Staffs. is similar. Nothing new has transpired since the previous season's notes were written (see *Brit. Birds*, November, 1933), but three records from one spot are of interest. Two Buntings were seen in a dry drain on Blackstone Edge, S.E. Lancs., on November 9th ; three were found in the same place on November 27th, and on December 17th one was still there and another was running along a gully just below. The highest number (nearly fifty) were seen on Axe Edge, N. Derbys., on October 19th.

Reed-Buntings (*Emberiza schœniclus*) wintered on the Pennines in great numbers, the bulk of them arriving towards the end of October and leaving during the last few days of March. On October 8th, H. M. Salmon drew my attention to one on Grinlow, near Buxton (1,300 feet); on October 13th a few turned up on *Molinia* beds below Goyt's Moss, and by the end of the month I had seen parties in the three N. Staffs. localities of Hollinsclough Moor, Blackbank Moor, and Goldsitch Moss. Mild weather on February 24th and 25th apparently caused a movement of Reed-Buntings near Whitworth, S.E. Lancs. They were seen in the open cloughs below the moors, but wintry weather appeared to send them back to the tops. The latest date came from an E. Cheshire moor where R. T. Hindley saw a solitary female Reed-Bunting on April 3rd.

They roost in thorns and other bushes, in peaty gruffs and drainage channels, and on moorland tracks and sheep-walks, but a large proportion sleep in company among and below dead bracken, and a favourite haunt of Reed-Buntings wintering on the moors is a *Molinia* slope with a bed of bracken or stunted plantation nearby. Usually flushed in ones and twos, they rise with thin squeaky call-notes, and when several are disturbed, they tend to band together and remain so for a time. The greatest number seen in one day was in S.E. Lancs., on November 12th. A party of us swept through a "sea" of moor-grass covering Whiteley Dean and about thirty Reed-Buntings flew from a fringe of bracken. Several scattered birds were put up on Clegg Moor; below Blackstone Edge was a flight of eleven and about twenty-five odd birds, while on Chelburn Moor a flock of about thirty was joined by a dozen more singles which were spread over a large area. Blackbank Moor, N. Staffs., was populated by a substantial flock in autumn; they seemed to scatter and diminish through the winter, but individuals collected again and, before leaving, the party assumed similar proportions to the autumnal gathering.

An interesting record during the 1933-34 season was that relating to a flock of about twenty Lapland Buntings (*Calcarius lapponicus*) near Rochdale, Lancs., on December 30th. One was shot a few miles away (Bury district) many years ago. There is an authentic record by I. Whittaker of a small party below Blackstone Edge, four miles N.E. of Rochdale, during December, 1927; a discovery unpublished because of the finder's unsatisfactory view of the birds and the fact that the species is practically unknown on the Pennines. It was a very cold day with snow lying about and the flock (about a dozen birds) was seen near an old lane (700 feet). Neither Reed- or Snow-Buntings, they were unlike anything previously seen, and there was just time to note that one or two had chestnut napes, when the entire flock rose and vanished.

My own experience was more fortunate, although visibility was appalling. Losing my way to Rooley Moor for over three hours in thick mist, I walked at length into the group of Buntings at a spot which I marked and located later as the upper end of a lane (900 feet) above Green Booth. At a glance they suggested sturdy Reed-Buntings, but with a different carriage and action. Some were running quickly about the path; others rummaged among the snow-covered grasses, and the remainder perched or crouched near stones fallen from the wall and on the wall itself. They were a variable lot with light-coloured bills, and plumage darker than expected, but no doubt the white mist and snow contributed towards this impression, or they may have been soiled through contact with grimy vegetation. One bird, presumably an adult male, had a dark head with a light streak over the eye, a light spot well below the eye, a chestnut patch at the nape of the neck and striated back and sides.

Standing within two paces of the nearest, I was able to write and sketch many details, until the sound of a shot startled them into flight and the mist swallowed them up immediately. Further visits to the lane revealed the probable attraction, an abundance of moor-grass seeds which had blown into the sunken lane from adjoining land, and on January 20th some Yellow Buntings (*Emberiza c. citrinella*) were seen, together with evidence of their roosting near the stones and in recesses of the wall. Systematic searching of the *Molinia* beds may some day show the Lapland Bunting to be an irregular visitor to the Pennines, and a likely associate with the Snow-Bunting.

THE SKINS AND EGGS OF THE GREAT AUK.

BY

THE REV. F. C. R. JOURDAIN, M.A., H.F.A.O.U., H.M.G.O.S.

NEWTON (*Ibis*, 1870, p. 259) estimated the number of existing skins at 71 (or 72 ?). Symington Grieve, in his monograph *The Great Auk, or Garefowl*, recorded 77 specimens of the Great Auk (*Alca impennis*) as existing in 1885 in the Appendix, pp. 4-24. (This is a translation of Prof. W. Blasius' list and is convenient for reference, as numbers are given to each specimen.) In Grieve's "Recent Information" he gives the number of skins as 78 or 79 (p. 25, 1888).

T. Parkin, in his pamphlet on *The Great Auk* (1911), gave the number of skins (on E. Bidwell's authority) as 80.

At the recent sale of the collections of the late Mr. George Dawson Rowley, who died in 1878, two skins came into the market and were sold at Stevens' on November 14th, 1934.

Both were purchased by Captain Vivian Hewitt of Rhyl, N. Wales; the first (lot 158), described as a female in summer plumage, for 480 guineas, and the second (lot 159), described as a male in summer plumage, for 500 guineas.

Mr. G. D. Rowley bought the first bird in 1869 from G. A. Frank of Amsterdam, who had acquired it from the collection of Graf von Westerholt-Glikenberg of Westerholt, near Münster, Westfalen. It is No. 13 in Grieve's list, and Dr. B. Altum mentions it in a footnote as still existing in this collection in the *Journal f. Ornithol.*, 1863, p. 115.

The second bird (No. 14 in Grieve's list) was bought by Rowley in 1868 from Gardner of London, who got it in 1848 from Lefèvre of Paris.

At the same sale no fewer than six eggs of the Great Auk were offered for sale, the largest number ever sold on a single occasion, although four eggs were sold at Stevens' on July 11th, 1865, and the collection of Mr. R. Champley of Scarborough contained nine specimens, which were, however, disposed of privately.

Of these six eggs, lot 152 (No. 9 in Grieve's list) was neatly blown with the usual two holes and characteristically marked. It was one of the ten eggs discovered in a box at the Royal College of Surgeons and identified by Newton. It was bought by G. D. Rowley for £33 on July 11th, 1865, and was sold on this occasion for 300 guineas to Captain Hewitt. It is Egg V. of Parkin's pamphlet.

Lot 153 (No. 12 in Grieve's list) is the egg bought in Paris by Yarrell, for Lady Cust, for 5 francs. It is neatly blown with two holes and is almost white, having one or two blackish streaks only at the larger end. This was bought by myself for 210 guineas.

Lot 154 (No. 11 in Grieve's list) was bought by G. D. Rowley from B. Bourman Labrey of Manchester. It had formerly been in the possession of Mr. Wilmot. This egg had been broken and put together by Yarrell. It retains its markings, but the repairing has been done in somewhat crude fashion. This was also purchased by myself for 140 guineas.

Lot 155 (No. 10 in Grieve's list) was a remarkable egg. The markings were very fresh and consisted of interlacing lines on a white ground. It is believed to have belonged to Captain Cook prior to 1779, and was bought by G. D. Rowley on March 16th, 1863, from John Gould, who thought it was probably of British origin. Unfortunately, it was blown by the removal of the small end, leaving a large jagged hole. This egg was bought by Sir Bernard Eckstein, Bart., of Uckfield, Sussex, for 260 guineas.

Lot 156 was No. 1 of the three eggs which formerly belonged to Lord Garvagh, who obtained it from the sale of T. H. Potts' collection. It was formerly in the collection of the Vicomte de Barde, and subsequently in the Musée de Boulogne, and then passed through Gardner to T. H. Potts. It is No. 13 in Grieve's list and is fairly well blown and typically marked. This was knocked down to Captain V. Hewitt for 300 guineas.

Lot 157 (No. 14 in Grieve's list) had been broken and roughly repaired, but was a well-marked specimen. It was also in Lord Garvagh's possession (No. 2) and is apparently the egg bought at T. H. Potts' sale on April 7th, 1854, for £20 (Egg II. in Parkin's pamphlet). This was bought by Mr. G. N. Carter of Withington, Manchester, for 100 guineas.

The number of eggs in existence is probably 75, but one or two have been lost sight of and it is desirable that a fresh census should be made.

In 1870 Newton estimated the number as 65 (*Ibis*, 1870, p. 261), Grieve in 1885 at 68, and in 1888 at "67 or 69".

Parkin in 1911 gave the number as 73, and since that date two more have been recorded, so that apparently the number at present known is 75.

A number of bones of the Great Auk from Funk Island were also included in the sale, and were bought by the Marquess Hachisuka for £3 5s. (lot 246).

RECOVERY OF MARKED BIRDS.

Owing to the increasing number of recoveries it has become necessary still further to curtail these lists. Birds of the species named below are omitted when ringed as full-grown and recovered in the same place (of which we now have many records), except in cases of exceptional interest, such as long life or cases of "homing". These species are: Starling, Greenfinch, Chaffinch, Yellow Bunting, Song-Thrush, Blackbird, Robin and Hedge-Sparrow. Although these recoveries are not published in the list, it is nevertheless important that ringers should continue to record them so that full data may be collected and become available for future work connected with the species concerned.

Rook (*Corvus f. frugilegus*).

RINGED AS NESTLING.

No.	*Ringed.*	*Recovered.*
RR.7757	Hunsdon (Herts.), 25.4.29, by J. D'eath.	Where ringed, 26.7.34, by H. B. Gardner.

RINGED AS FULL-GROWN.

(*c*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

RT.9756	Chipping Norton (Oxon.), transported to and released on Horse Guards' Parade [65 m. S.E.], 15.2.34, by E. M. Nicholson.	Little Wakering (Essex), 1.7.34, by Major Wedd.
RT.9754	Ditto 15.2.34	Cliffe-at-Hoo (Kent), Spring, 1934, by W. B. Alexander.

Jackdaw (*Colœus m. spermologus*).

RINGED AS FULL-GROWN.

RS.5903	Kilbarchan (Renfrew.) 11.5.33, by F. J. Ramsay.	Where ringed, 27.5.34, by ringer.
RT.5746	Shipley (Yorks.), 14.5.33, by C. Wontner-Smith.	Where ringed, 21.5.34, by ringer.

Starling (*Sturnus v. vulgaris*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

GA.966	Largo (Fife.), 19.5.34, by A. H. Eggeling.	Helensburgh (Dumbarton.), 5.9.34, by R. Lawson.
RR.7112	Penrith (Cumb.), —.6.30, by H. J. Moon.	Stainton (Cumb.), 19.8.34, by ringer.
FA.882	Ditto —.5.33	Greystoke (Cumb.), 8.11.34, by ringer.

Starling (*continued*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
FA.531	Ullswater (Westmor.), —.5.33, by H. J. Moon.	Carsphairn (Kirkcudbr.), 29.11.34, by D. Murdoch.
GB.924	Wolsingham (Durham), 27.5.34, by R. Martinson.	Cambo (Northumb.), 7.8.34, by G. McQueen.
TF.402	Oxford, 17.5.33, by Oxford Orn. Soc.	Cumnor Hill (Berks.), 22.7.34, by J. Seagrave.
GL.541	Tenterden (Kent), 16.6.34, by N. F. Ticehurst.	Ashford (Kent), 28.11.34, by O. Roseveare.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
P.6896	Seaton (Devon.), 19.5.31, by A. Mayo.	12.3.32; 24.1.33.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
FB.735	York, 4.2.34, by Bootham School.	Skelskor (Sjælland), Denmark, 9.9.34, by C. Jorgensen.
GP.731	Alderley Edge (Ches.), 9.11.34, by E. Cohen.	Stockport (Ches.), 19.11.34, by J. Jackson.
FL.757	Evesham (Worcs.), 19.12.33, by A. J. Harthan.	Ortelsburg (East Prussia), 29.5.34, by J. H. Rogers.
AN.1335	Malvern (Worcs.), 28.10.31, by P. Morshead.	Tenbury Wells (Worcs.), 1.7.34, by A. Booton.
FJ.695	Ditto 21.12.33	Apperley (Glos.), 28.11.34, by R. H. Boulton.
FP.442	Ditto 23.2.34	Tessin (Mecklenburg), Germany, 25.4.34, by Herr Thorbeck.
FP.280	Ditto 15.2.34	Ruysselede, W. Flanders, 27.10.34, by V. van Straelen.
FS.525	Longhope (Glos.), 21.3.34, by Cheltenham Coll.	Northleach (Glos.), 7.8.34, by B. Burge.
XF.173	Oxford, 5.2.34, by Oxford Orn. Soc.	Chieveley (Berks.), 11.7.34, by R. Bune.
FH.661	Ditto 21.11.33	Newbury (Berks.), 24.11.34, by C. Taylor.
FL.260	Ditto 28.1.34	North Mimms (Herts.), 11.7.34, by Postmaster.
FH.671	Ditto 26.11.33	Heiligenbeil, East Prussia, 3.11.34, by Vogelwarte, Rossitten.
FH.474	Friern Barnet, London, 11.9.33, by L.N.H.S.	Piccadilly, London, 8.6.34, by Mrs. Law.

Starling (*continued*).

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
FH.542	Ditto 3.12.33	Moorgate, London, 2.11.34, by C. Bird.
SY.264	Ditto 22.12.33	Telsiai, Lithuania, 25.5.34, by Prof. Ivakauskas.
H.2376	Ditto 16.12.33	Gumbinnen, East Prussia, 25.7.34, by W. Delming.
GR.760	Winchelsea (Sussex.), 8.9.34, by P. Hollom.	Wadebridge (Cornwall), 19.11.34, by J. Hawken.
XF32	Seaton (Devon.), 7.12.33, by A. Mayo.	Bremen, Germany, —.6.34, by W. Niehaus.
RF.558	Ditto 24.1.33	Copenhagen, Denmark, 29.9.34, by V. Eriksen.
FK.121	Branscombe (Devon.), 29.12.33, by P. Morshead.	Tilsit, East Prussia, —.6.34, by Vogelwarte, Rossitten.
R.8838	Sidbury (Devon.), 2.1.31, by P. Morshead.	Stettin, Pomerania, 22.7.34, by R.S.P.B.

Greenfinch (*Chloris ch. chloris*).

RINGED AS NESTLINGS.

NP.289	Penrith (Cumb.), —.6.33, by H. J. Moon.	Where ringed, 11.6.34, by ringer.
FF.193	Shipley (Yorks.), 9.6.33, by C. Wontner-Smith.	Ditto 13.5.34.

RINGED AS FULL-GROWN.

MN.364	York, 25.4.34, by Bootham School.	Aldershot (Hants.), —.6.34, by J. Phillips.

(*e*) MOVED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

FK.885 FK.888 FK.899 FL.512	Cirencester (Glos.), released 4 m. S., 26.3.34, by R. L. Bickersteth.	Where ringed, 26.3.34, by ringer.

Chaffinch (*Fringilla c. cælebs*).

RINGED AS NESTLINGS.

FF.145	Shipley (Yorks.), 24.5.33, by C. Wontner-Smith.	Where ringed, Sept., 1933; April, May, Aug., 1934, by ringer.
F.8478	Rye (Sussex), 27.5.30, by R. G. Williams.	Playden (Sussex), —.5.34, by Miss Duprey.

Brambling (*Fringilla montifringilla*).

No.	*Ringed.*	*Recovered.*
L.2512	Kendal (Westmor.), 26.12.33, ad., by M. Monro.	Antwerp, Belgium, 22.10.34, by V. van Straelen.

Meadow-Pipit (*Anthus pratensis*).

MS.870	Bamburgh (Northumb.), 20.5.34, nestling, by W. J. Eggeling.	Messanges (Landes), France, 15.10.34, by *Chasseur Francais*.
M.2145	Seaton (Devon.), 18.2.32, ad., by A. Mayo.	Where ringed, —.11.33, by ringer.

Pied Flycatcher (*Muscicapa h. hypoleuca*).

NA.84	Rydal (Westmor.), 20.6.32, nestling, by Miss Higginbotham.	Ambleside (Westmor.), —.5.34, by G. Rowlandson.

Mistle-Thrush (*Turdus v. viscivorus*).

AP.8721	Duddingston (Midlothian), 3.5.33, nestling, by D. K. Bryson.	Stow (Midlothian), 8.9.34, by A. Fortune.

Song-Thrush (*Turdus e. ericetorum*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
GH.355	Wensleydale (Yorks.), 20.6.34, by Bootham Sch.	Burnley (Lancs.), 17.9.34, by F. Whitham..
FN.161	Thirsk (Yorks.), 13.7.34, by Bootham Sch.	York, 4.9.34, by W. Cussars.
FX.706	Shipley (Yorks.), 22.4.34, by C. Wontner-Smith.	Leeds (Yorks.), —.10.34, by J. Dobson.
T.7538	Oxford, 25.5.30, by J. A. G. Barnes.	Eynsham (Oxon.), 10.8.34, by P. Cregan.
AR.3435	Burghfield (Berks.), 22.4.34, by T. G. H. Kirkwood.	Ham Street (Kent), 15.7.34, by V. Powell.
S.8643	Swaffham (Norfolk), 20.4.31, by R. S. Broke.	Le Porge (Gironde), France, 18.11.34, by A. de Groot.
FE.121	Ashford (Kent), 24.4.34, by St. Edmund's Sch.	St. Savinien (Charente Inf.), France, 14.10.34, by M. Dominique.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
PF.453	Penrith (Cumb.), —.6.32, by H. J. Moon.	7.5.34.
FD.784	Ullswater (Cumb.), —.6.33, by H. J. Moon.	1.7.34.
J.4585	Ingleton (Yorks.), —.5.30, by H. J. Moon.	30.6.34.
JF.281	Ballaugh (I. of Man), 27.6.32, by F. A. Craine.	23.5.34.
BF.922	York, 18.5.33, by Bootham Sch.	3.6.34.
CF.327	Ditto 23.5.33.	22.8.34.

Song-Thrush (*continued*).

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
CF.362	Ditto 14.7.33.	12.5.34.
AN.4143	Knutsford (Ches.), 21.6.31, by E. Cohen.	4.6.34.
P.7509	Malvern (Worcs.), 25.5.31, by A. Morrison.	15.6.34.
R.2575	Wokingham (Berks.), 29.5.31, by J. N. Fletcher.	16.7.34.
P.2802	Kelling (Norfolk), 12.5.31, by R. M. Garnett.	12.5.34.

RINGED AS FULL-GROWN.

No.	*Ringed.*	*Recovered.*
P.4692	Perth, 28.7.32, by Lord Scone.	Paisley (Renfrew.), —.6.34, by J. Rollo.

Blackbird (*Turdus m. merula*).

RINGED AS NESTLINGS.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
YF.39	Langwathby (Cumb.), —.5.33, by H. J. Moon.	2.6.34.
CF.337	York, 23.5.33, by Bootham Sch.	30.6.34.
S.6379	Rugby (Warwick.), 14.6.31, by Rugby Sch.	30.6.34.
T.4890	Kelling (Norfolk), 24.4.30, by R. M. Garnett.	24.3.34.
TF.846	Cambridge, 6.5.33, by Sanctuary Club.	25.1.34.

RINGED AS FULL-GROWN.

(*c*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
U.5810	Scone Estate (Perth.), 22.1.33, by Lord Scone.	Ostenfelde, Westphalia, 10.6.34, by Vogelwarte, Rossitten.
FB.721	York, 24.1.34, by Bootham Sch.	Ulsted, Jylland, Denmark, 24.6.34, by N. Klitgaard.

Wheatear (*Œnanthe œ. œnanthe*).

MX.357	North Roe, Shetland, 25.6.34, nestling, by W. J. Eggeling.	Khouribga, Morocco, (approx. 33° N. 7° W.) 29.10.34, by S. Ouleasi.

Robin (*Erithacus r. melophilus*).

RINGED AS NESTLINGS.

MS.603	Flotterstone (Midlothian), 26.5.34, by D. K. Bryson.	Colinton (Midlothian), 27.8.34, by C. Coventry.
K.0812	Kelling (Norfolk), 29.4.32, by R. M. Garnett.	Where ringed, 18.2.34, by ringer.

Hedge-Sparrow (*Prunella m. occidentalis*).

Recovered 7 years (to the day) after ringing, this Hedge-Sparrow is the longest lived case of this species among our records, with one exception, viz., Z.566, which was ringed adult at Cheadle (Staffs.) by the late J. R. B. Masefield, and recovered in the same place after 8 years and 4 months (Vol. XVII., p. 80).

No.	*Ringed.*	*Recovered.*
D.9020	Dornoch (Suth.), 9.7.27, ad., by E. Cohen.	Where ringed, 9.7.34, by ringer.

Swallow (*Hirundo r. rustica*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
M.3588	Wolsingham (Durham), 26.6.33, by R. Martinson.	Brandon (Durham), 2.9.34, by J. Headlam.
MP.506	Laugharne (Carms.), 16.8.34, by J. F. Thomas.	Pontardulais (Glam.), 10.9.34, by I. Davies.

(*b*) RECOVERED WHERE RINGED.

NJ.45	Penrith (Cumb.), —.7.32, by H. J. Moon.	10.8.34.
MA.14	Wensleydale (Yorks.), 9.7.33, by Bootham Sch.	11.6.34.
L.4991	Laugharne (Carms.), 5.8.31, by J. F. Thomas.	8.8.34.
NW.658	Ditto 7.8.33.	16.8.34.

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

Laugharne (J. F. Thomas).

No.	*Ringed.*	*Recovered.*
N.4578	8.8.32	7.8.33; 11.8.34
N.4721	24.8.32	11.8.34
N.4767	2.8.33	17.8.34
NW.632	3.8.33	3.8.34
NW.651	5.8.33	22.8.34
NW.700	11.8.33	23.8.34
NW.709	11.8.33	8.8.34
NW.747	16.8.33	4.8.34
NW.762	19.8.33	3.8.34
NW.764	24.8.33	3.8.34
NW.808	26.8.33	24.8.34
NW.678 NW.679	8.8.33	4.8.34
NW.698 NW.699	10.8.33	22.8.34

The last two pairs of birds were mates in both years.

Skokholm (R. M. Lockley).

No.	*Ringed.*	*Recovered.*
MH.224	26.8.33	30.5.34

This Swallow was caught as a young migrant in 1933, and the following year was nesting on Skokholm.

Martin (*Delichon u. urbica*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
NR.540	Nether Alderley (Ches.), 26.6.33, by E. Cohen.	Where ringed, summer, 1934, by ringer.
NX.485	Ditto 26.6.33	Ditto 11.8.34.

RINGED AS FULL-GROWN.

MD.989	Nether Alderley (Ches.), 1.8.33, by E. Cohen.	Where ringed, Summer, 1934, by ringer.

NOTES

DIVING OF THE SHOVELER.

In connexion with Mr. Bertram Lloyd's note on this subject (*antea*, pp. 206-7), the following may be of interest :—

On October 17th, 1930, while watching duck on the Gosforth Park Bird Sanctuary lake, Northumberland, I noticed a couple of female Shoveler (*Spatula clypeata*) engaged in diving. My note, set down at the time, states that " they went under rather clumsily, partly opening their wings and making a splash ". They only remained below for a brief period at each dive, not to be compared with the average time taken by a diving-duck ; but they continued operations for a considerable time. Other Shoveler on the lake, two or three dozen in number, of both sexes, took no share in these exercises. Judging from the vegetation visible on the surface of the water, the lake at the point where they were diving was only shallow. I was unable to determine what kind of food they were procuring.

I have observed Shoveler, on this lake and elsewhere, from time to time over a number of years ; but this is the only instance of the kind that I have seen.

George W. Temperley.

LONG-TAILED DUCK IN HAMPSHIRE.

An immature male Long-tailed Duck (*Clangula hyemalis*) was shot during a duck-drive off Capt. A. H. Franklyn's new lake, near Shedfield, Hants, on November 19th, 1934. This bird had been noticed diving about for the last month, and was sent, fortunately, to Dr. P. R. Lowe at the British Museum.

Long-tailed Duck are mentioned in Kelsall and Munn's *Birds of Hampshire*, as one at Emsworth, 1860, and a pair in the Hart collection, shot January 6th, 1870, so that the bird is a rare visitor to Hampshire. M. Portal.

SLAVONIAN GREBE IN INNER LONDON.

On November 28th, 1934, at 9 a.m., when we were observing the duck on the Round Pond, Kensington Gardens, and looking for a Goldeneye which had been frequenting the pond for over a month, we noticed a Grebe swimming about. It was far out at first, but with a telescope it could be identified as a Slavonian Grebe (*Podiceps auritus*), a diagnosis which was confirmed when the bird came to within some fifteen yards of the edge. Mr. A. Holte Macpherson saw it later in the morning. This is the first record for this species in Inner London.

E. G. PEDLER.
G. CARMICHAEL LOW.

CREAM-COLOURED COURSER IN NORFOLK.

A CREAM-COLOURED COURSER (*Cursorius c. cursor*) was obtained at Thornham, in Norfolk, on October 3rd, 1934. It was shot by a wildfowler on the coast, and was sent on to me for preservation.

I think that I am right in saying that this is the first Courser to be taken in Norfolk, but I see in R. Lubbock's book, *Fauna of Norfolk*, that it has been observed on two occasions, namely at Morston in 1847 and at Westacre in 1855.

It is going to be added to the Norwich Museum collection.

HENRY H. EDWARDS.

[Mr. Edwards kindly sent us the bird for examination. It was a bird of the year retaining a number of feathers of the juvenile plumage.—EDS.]

ARCTIC SKUA IN BERKSHIRE.

ON October 17th, 1934, when at Reading Sewage Farm with a party of boys from Leighton Park School, I was surprised to see what I took to be a large, dark bird of prey flying low over the reeds. Several members of the party got quite a good view of it before it landed in the rushes some distance away, and we went off in search of it. We had given up the search, and were going home, when a Skua came flopping along the ground towards us and landed at our feet. We took it back to the school, where we identified it as a juvenile Arctic Skua (*Stercorarius parasiticus*).

It was at first so weak that it could hardly stand, but began to revive on a diet of raw herrings and was apparently well on the way to recovery when it had a mysterious relapse, began to mope, and eventually died on November 10th. A post-mortem, undertaken by Mr. F. W. Flattely, M.Sc., revealed that the right lung had been injured, and that the thoracic and abdominal air-sacs contained a quantity of congealed blood. The cause of the injury is unknown and there was no external sign of any injury, though the bird was, of course, in poor condition.

It was a female, and a dark bird, though the breast and cheeks were distinctly lighter than the rest of the plumage. It is the third record of the species for Berkshire, the last having been shot at Newbury in 1883. J. D. WOOD.

BREEDING RANGE OF THE BRAMBLING.—In connexion with the report of a Brambling ringed in Cheshire in February, 1931, and recovered at Krajina, in Yugoslavia, July 12th, 1933 (*antea*, p. 110), Mr. H. G. K. Molineux points out that there are accounts of the status of the bird in this region, which point to its nesting and thus add greatly to the interest of this recovery. Unfortunately, no specific evidence of breeding is given in these accounts, and it would be interesting to know if nests have actually been found or whether the mere presence of the bird in the breeding-season was taken as the basis of these reports. Perhaps our confrères in Yugoslavia would inform us of the present breeding status of the bird. Mr. Molineux very kindly provides the following translations of the accounts referred to :—

SCHULZ in his " List of the Birds observed in Krain from 1890-1895 " (*Mittheilungen des ornithologischen Vereines in Wien*—" *die Schwalbe* ". XIX., Nr. 8, 1895, p. 115) says : " *Fringilla montifringilla L.*" Only to be seen in winter about Laibach, some years quite abundant. Breeding-bird in higher mountain forests.

SAJOVIC in his " Ornithological Notes from Krain for 1914-1916 " (*Carniola*, *N.S.*, VIII., 1/2, Ljubljana, 1917, p. 90) says : " (*Zeba nikavica, Fringilla montifringilla L., Bergfink*) " nests on our mountains, but during cold winters descends to the plains. In 1914 it appeared in the Ljubljana and Kranj districts in the second week of January and remained all through February ; in the autumn it did not appear. In the following year, 1915, it appeared in Ljubljana on the hills only during the last days of January, and at the same time in Kranj. In the autumn there were none on the plains. In 1916 some arrived on the hill in Kranj on February 9th, but remained there only a few days. At mating time there was a fair proportion which found sufficient food in the valley. For this reason they remained there until the last summer months.

PROBABLE NESTING OF RED-BACKED SHRIKE IN MIDLOTHIAN.—Miss E. V. Baxter and Miss L. J. Rintoul describe (*Scot. Nat.*, 1934, p. 70) the result of their investigation of a report of breeding of *Lanius collurio*. A typical Shrike's nest was found in a high thorn hedge, and under it, hanging on thorns, the " skeletons " of three small birds. The nesting took place in 1932, and the bird, as described to the authors, had Shrike characteristics. There does not appear to be another thoroughly substantiated record of breeding in Scotland.

CHIFFCHAFF IN NORTHUMBERLAND IN NOVEMBER.—Miss J. M. Ferrier informs us that she and Miss Hordern observed a a Chiffchaff (*Phylloscopus collybita*) at Holy Island on November 1st, 1934—rather a late date for the appearance of the bird.

DARTFORD WARBLER IN DEVONSHIRE.—With reference to the note on this subject (*antea*, p. 204), Col. R. M. Byne reminds us that as is recorded in Mr. Lewis R. W. Loyd's *Birds of South-East Devon*, he saw one on March 22nd, 1924, at the edge of Woodbury Common. Col. Byne states that notwithstanding frequent search he has not seen any Dartford Warbler there since and that many possible haunts have been destroyed by fire.

GREY PHALAROPES IN SUSSEX, LEICESTERSHIRE AND SOMERSET.—Mr. Philip Rickman informs us that he saw a Grey Phalarope (*Phalaropus fulicarius*) at Seaford on October 2nd, 1934, which remained two days.

Mr. W. H. Barrow writes that one was picked up on the railway line at Barkby on October 30th, 1934, and sent to him. The bird was thin.

Mr. J. W. Clough saw one near Barrow Gurney on November 4th, 1934. This bird was first seen on October 27th and left on November 5th.

GREAT SNIPE IN HAMPSHIRE.—Mr. C. W. Mackworth-Praed informs us that he shot a Great Snipe (*Capella media*) near Fordingbridge on September 3rd, 1934.

BLACK-HEADED GULLS NESTING IN TREES IN SUTHERLAND. —With reference to the notes on Black-headed Gulls nesting in trees (*antea*, pp. 115-117 and 152), Captain H. A. Gilbert points out that he and Mr. Arthur Brook, in their *Secrets of Birds Life* (1924), in referring to a colony of Black-headed Gulls, wrote as follows, p. 160 : " we found a few [nests] placed in the trees, some as high as nine and ten feet from the ground ".

Captain Gilbert informs us that this was near Skibo in 1923, that there were (from memory) about fifteen nests, which were in about ten trees. The trees were spruce, growing on a small island in an artificial lake close to the Dornoch Firth.

ICELAND GULLS IN INVERNESS-SHIRE, RENFREWSHIRE AND EDINBURGH.—Mr. Seton Gordon informs us that he saw on November 23rd, 1934, an immature Iceland Gull (*Larus leucopterus*) at Fort William, and another on the same day at Mallaig.

Mr. T. Malloch reports one (*Scot. Nat.*, 1934, p. 72) at Greenock, on March 23rd.

Three are recorded (*l.c.*, p. 82) by the Midlothian Club from Granton during 1933, an immature bird on February 26th, an adult April 20th to 24th, and an immature bird from April 26th to May 6th.

A Flock of Razorbills in Middlesex.—With reference to Dr. P. R. Lowe's article on the Razorbills at Littleton Reservoir (*antea*, pp. 188-190) Dr. Lowe writes us that he has now been informed that these birds were seen alive at the Reservoir by Mr. M. R. James, the Resident Engineer, on October 22nd.

REVIEW.

Birds of Great Britain and their Natural History. By W. P. Pycraft. (Williams & Norgate). Illustrated. 7s. 6d. net.

The title of this little book does not exactly explain its scope. Mr. Pycraft writes of such subjects as changes of plumage, protective coloration, courtship, territory, eggs, nestlings, migration and so on, giving examples from British birds and, it may be added, occasionally non-British ones. Mr. Pycraft thus writes of "problems" with a view to opening the eyes of the incurious, and his subjects and examples are well chosen and interesting enough to awaken curiosity, though his explanations are not always very satisfactory. The book should appeal to those who have done some bird-watching and have a desire to know something more of the problems which such observation constantly presents.

It must be said, however, that the book is by no means free of misstatements, some merely irritating, others serious. We are told, for instance, that the Crested Tit is found in Scotland and not met with again save in Scandinavia, Poland and North Prussia, from which one would scarcely infer that it is to be found, for example, as near as Holland or Brittany. The British Golden Plover is said to have been first distinguished by Colonel Meinertzhagen instead of the late Mrs. Meinertzhagen. The Dartford Warbler is described as being like, and the Bearded Tit as unlike Continental birds, whereas the opposite is correct. A most astonishing statement is that the Snowy Owl turns white in winter, but we are not told what colour it is in summer! It is asserted that our native stock of Ruff, Avocet, Black Tern, Black-tailed Godwit and Spoonbill "has been exterminated largely by egg-collectors, but also, in part by drainage". What is Mr. Pycraft's authority for this statement? It is certainly not in accordance with the evidence carefully collected in county avifaunas. We are told that the "vermin" destroyer has now exterminated the Kite, but as we all know a remnant remains. Perhaps the most curious and careless "comedy of errors" concerns a pair of "Hobbies" which, it is said, strove to rear their young for sixteen years on a moor in Northumberland. "Every year, without exception, not only the nest, but the builders thereof were slain (*sic.*), 'because they killed young grouse'. There never was the slightest foundation for that charge, for the Hobby feeds almost entirely on beetles". The Hobby does not build a nest on moors and has never been known to breed in Northumberland. Doubtless the Merlin is intended, but that bird only exceptionally takes beetles. We can only repeat that such careless errors should not occur in a book written with some authority.

LETTERS.

PINTAIL BREEDING IN DUMBARTONSHIRE AND HAND-REARED BIRDS.

To the Editors of BRITISH BIRDS.

SIRS,—I read with interest Mr. Rickman's note regarding the nesting of the Pintail in Dumbartonshire (*antea*, p. 206). For many years I have kept and bred Pintail at Tullichewan, which is only about two or three miles from the spot where Mr. Rickman found the nest this year. Any young which were reared were allowed their freedom if they so desired, and while some stayed at home others flew away and did not return. For the past two years one duck obviously had a nest some distance away, only returning each evening for food, and departing as soon as satisfied. As I have several pinioned drakes I should imagine this particular duck's eggs would be fertile.

I think it more than likely, therefore, that one of my hand-reared birds was the owner of the nest which Mr. Rickman discovered.

WARDHEAD, STEWARTON, J. A. ANDERSON.
AYRSHIRE.

TERRITORY IN THE GREAT CRESTED GREBE.

To the Editors of BRITISH BIRDS.

SIRS,—Messrs. L. S. V. Venables and David Lack describe a number of valuable and interesting observations in their paper under this title (*antea*, p. 191), but have they really shown, as they say, that territorial behaviour bears no direct relation to food supply ? Surely, in order to state the relation of something to food supply we must first know what food supply is, yet what little the paper contains on this essential aspect is admittedly pure speculation.

I suggest that before we can begin to draw general deductions of value we shall need to know :—

(*a*) What types of food are actually taken by Great Crested Grebes on these two ponds, and how much of each type is consumed during March, April, May, June and July ?

(*b*) Whether any or all of these types of food are subject to seasonal or annual fluctuations, or are undergoing substantial changes of status—e.g., whether they are disappearing or are becoming more abundant ?

(*c*) Whether the distribution of the main types of food favoured is similar as regards quantity and availability in all parts of the two ponds, or, if not, which parts are richer or poorer than the average in food supply ?

(*d*) What changes take place in territorial behaviour when the density of Grebe population reaches or exceeds the limit that can be permanently maintained on the ponds ?

The issue surely is not whether Great Crested Grebes at times nest in colonies, which is a well-known fact, but whether, in the event of over-population occurring, territory plays an important part in driving out the surplus population to fresh quarters, and in afterwards keeping the Grebe population stable for a period at a level which the food resources of the pond can maintain. There is a further question—whether the territorial behaviour of the Grebes varies at different phases of population density, measured against the quantity of food supply available. Such speculations as " the greatest food pressure presumably occurs when the young are hatched " do not help us far in this direction.

Nor is there any evidence for other assumptions which underlie the argument—for example, the assumption that the individual variations in territorial behaviour which have been observed in this single case are constant at different levels of population density.

To collect the necessary material for a solution of the problem is no doubt a formidable task, but until it has been collected rival theories must remain simply rival theories, and more should not be claimed for them.

E. M. NICHOLSON.

SOME REFLECTIONS ON TERRITORY.

To the Editors of BRITISH BIRDS.

SIRS,—After reading Messrs. Venables' and Lack's interesting paper on "Territory in the Great Crested Grebe" (*antea*, pp. 191-198) it seems to me that there are some theoretical considerations in connexion with the territory theory which need stressing at the present time. My main criticism of the critics is that they appear to require as a condition of the validity of the theory a greater precision in the operation of the territorial instinct that I can see any justification for expecting.

My essential point is, no doubt, to a great extent implicit in Mr. Nicholson's reply to the Lacks (*Brit. Birds*, Vol. XXVII., p. 234), but it seems to need stating in less general terms. To begin with, it appears to be implied—if not expressed in so many words—that if the territory theory is sound there ought to be a sort of mathematical precision in the adjustment of territory to food supply. But is there any justification for such an assumption? The amount of food suitable to a given species which a given area will produce is not a fixed quantity. It varies within fairly wide limits in different localities, and in different seasons in the same locality. If, then, we believe that territory *is* ultimately related to food supply and suppose (as presumably we do if we are orthodox biologists) that the territorial instinct has been gradually developed through natural selection, I suggest that all we are justified in expecting is that there will be a certain standard size of territory* roughly fixed for each species, which will bear a rough relation to the mean area which under varying topographical conditions over a wide range, and in bad seasons as well as good, will provide an adequate food supply for the family. Actually the relation will, of course, need to be such as to leave a fair margin, ensuring that the food shall not be so reduced at the end of any season as to impair the supply in subsequent years.

Whether such a relation does in fact hold we admittedly still do not know, but if a correlation between territory and food supply does exist I am convinced that it is bound to be of the kind suggested. If this is so, then to prove that in a particular locality or even in a number of localities the sizes of territories are larger than the amount of food in those particular localities would require is really irrelevant. The relation between territory and food, if there is any, must be a general one, suited to a wide range of space and time. I can see no reason for supposing that the territorial instinct provides or could provide any mechanism for accurate adjustments to every local variation in the conditions.

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*It is, of course, a well-known fact that where there is little competition territory areas tend to vary considerably and their limits to be vaguely defined. Such territories may be contracted under pressure, but not indefinitely. As Huxley has emphasized in a passage which should be read in this connexion (Vol. XXVII., p. 277) "there appears to be a minimum size of territory, any encroachment on which is bitterly resisted", though "above this size resistance . . . . . is less wholehearted". It seems probable that it is this lower limit of size which is the important or critical one, corresponding to what, for want of a better term, I have called a "standard size" in the above context. This lower limit of territory size deserves closer attention.

An analogous criticism applies to the remark in the paper quoted that one pair of Grebes attacked not only their own kind, but also Coots, " which are not food competitors of the Grebes ". If territory *is* mainly an affair of food supply the requirements would be fulfilled by a general aggressiveness to other birds of about the same size, and we have no need to suppose that the birds have a nice discrimination as to exactly which species are competing with them for food and which are not.

I can imagine opponents of the theory objecting that to postulate that the food-territory relation is of the loose and general nature I have suggested is merely to bolster up the theory by making it much more difficult to disprove than if the relation is supposed to be more precise. To anyone disposed to make such a comment I would reply by repeating what I have said above, to the effect that if the theory connecting territory with food supply is valid at all, then, in my opinion, such a version of it as I have given is the only logical one possible, and if its adoption makes the obtaining of valid evidence either for or against it more difficult this is unavoidable in the nature of things.

I hope no one will carry away the quite wrong impression that I am decrying the value of the field work which is being done on territory or implying that the point of view which I have outlined removes all difficulties. It will be obvious, I think, to anyone who has properly digested the criticisms, that it does not touch some of them, and clearly a great deal more careful and critical field work is needed above all things at the present stage.

It is no part of my intention now (and would, anyhow, be impossible in an already long letter) to enter into a fresh review of territory, but I may be allowed to observe in conclusion that when many species merely preserve a small area immediately adjacent to the nest, while others resist intrusion on a considerably wider area, there must be some valid adaptive reason for the different behaviour of the latter class. The view that at least this more extended sort of territory (to which alone, perhaps, the term would be better restricted) is ultimately correlated with food and ensures on the average the most advantageous spacing of pairs over the range of the species, still stands as the most plausible working hypothesis yet put forward to account for it. Further knowledge may amend it either more or less than some of us expect, but bird watchers would do well to eschew the rather naive idea that it is substantially affected by every local observation which seems at first sight inconsistent with some of the rather crude versions of it which seem to be prevalent. It needs to be recognized that it will only be when a great mass of laboriously obtained data for numerous species, under varying conditions, is available for critical analysis, that we shall have a chance of giving anything approaching a really certain answer to the complex problem of the real biological significance of territory. As a contribution towards this desirable end every bit of evidence helps, but if we are to plan our observations or experiments to the best advantage it is important that we should have a clear grasp of what the essential postulates and implications of the territory theory are (or are not), and I offer these reflections in the hope of helping to clarify the position a little. B. W. TUCKER.

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Contents of Number 9, Vol. XXVIII., February 1, 1935.

PAGE

Great Crested Grebes at the Tring Reservoirs. By Chas. Oldham 250
The Food of Certain Birds of Prey. By R. H. Brown 257
Time of Singing of the Goatsucker. By S. E. Ashmore, B.SC., F.R.MET.S. 259
Recovery of Marked Birds (*concluded*) 261
Birds seen in the North Atlantic, August and September, 1934. By K. B. Rooke 269

Notes :—

Continental Jay and Scandinavian Lesser Black-backed Gull in Essex (Dr. J. W. Campbell)... 276
A Greenfinch "Homing" Experiment (W. E. Kenrick) ... 276
Crested Tits in West Ross-shire (W. B. Alexander) 277
The Ectoparisites of the House-Martin and an Appeal (G. B. Thompson) 278
Late Passage of Swifts in Sussex (R. H. Higgins) 279
Montagu's Harrier in Oxfordshire (R. J. Spittle) 279
Bewick's Swans in Anglesey (E. Cohen)... 280
Pintail in Middlesex (Mrs. W. Boyd Watt) 280
Grey Plovers in Wiltshire (W. B. Alexander) 281
Waders in the Bristol District, 1933-1934 (H. H. Davis and H. Tetley) 281

Short Notes :—

Scarce Birds in Forth Area. Snow-Bunting Inland in Essex—*Correction.* Willow-Warbler in Glamorganshire in December. Dipper Breeding in Hoy, Orkney. Homing Experiments withSwallows. Gannet in Nottinghamshire. Recorded Nesting of Leach's Fork-tailed Petrel in Orkney. Little Stints in Cardiganshire. Razorbill Inland in Essex. Puffin in Berkshire 282

Letters :—

Territory and Food (Eliot Howard) 285
Territory and Food with Special Reference to the Great Crested Grebe (D. Lack) 287
Water Birds on the Highgate Ponds (Prof. J. S. Huxley and A. T. Best) 288

R

BRITISH MUSEUM NATURAL HISTORY

GREAT CRESTED GREBES AT THE TRING RESERVOIRS.

BY

CHAS. OLDHAM.

THE Tring Reservoirs in Hertfordshire lie at about 350 feet, in open country, N.W. of the Chiltern escarpment. They comprise three contiguous pools—Marsworth, Startop's End and Little Tring, with an aggregate area of about 90 acres ; and, some half a mile away from the others, Wilstone Reservoir, 120 acres in extent. Here, in normal seasons, from twenty-five to thirty pairs of Great Crested Grebes (*Podiceps c. cristatus*) nest. The breeding birds arrive during the second half of February and the first half of March, but hard weather may retard them and frost may drive them away again for a time. The nests are built in the big beds of reed (*Arundo phragmites*), reed-grass (*Glyceria*), lesser reed-mace (*Typha angustifolia*) and, infrequently, among the floating leaves of *Polygonum amphibium*. The breeding birds, or most of them, leave in October and November.

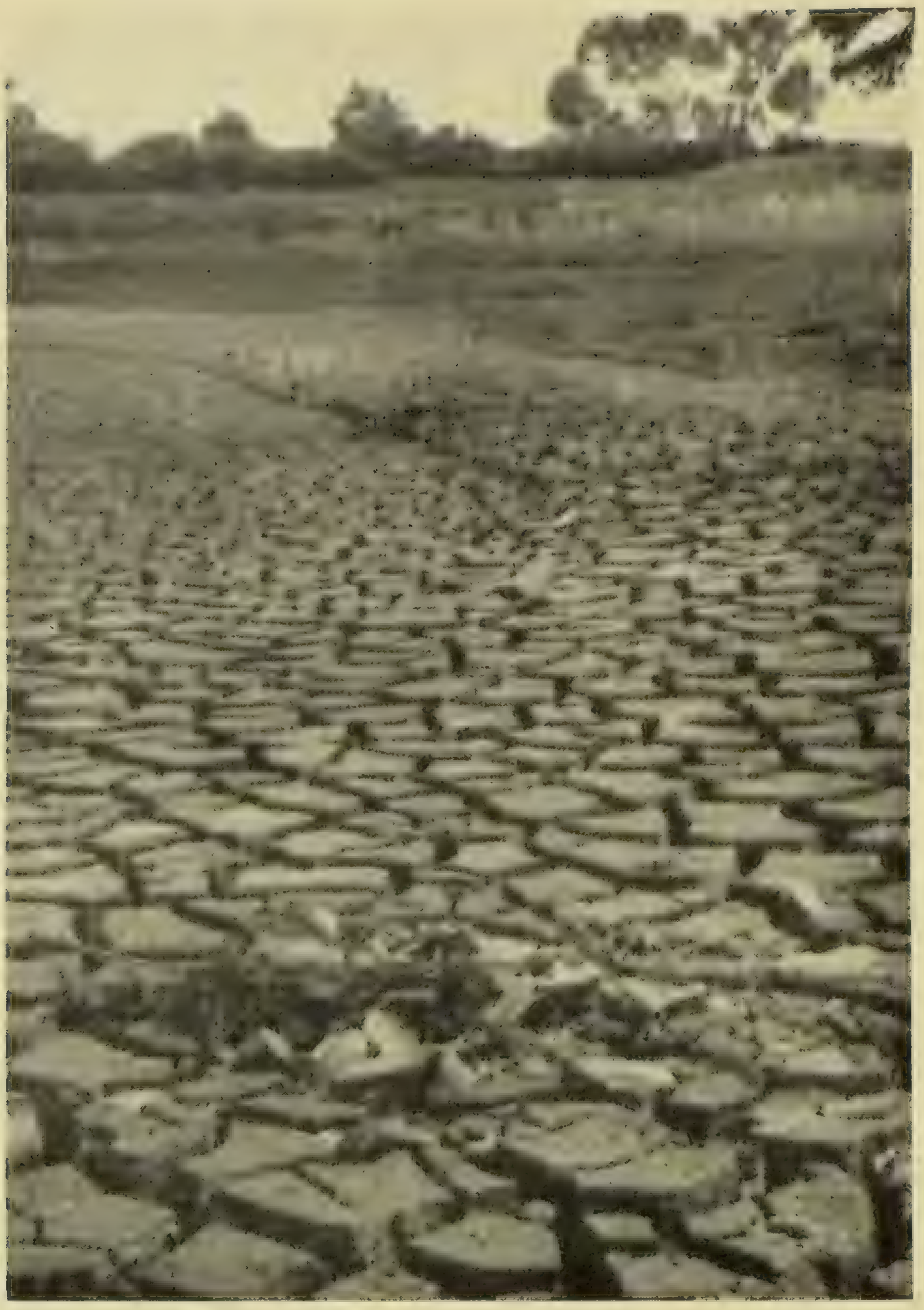
In 1934 none nested. At the beginning of the year the reservoirs were exceptionally low, owing to the drought of the previous twelve months, and even then a belt of dry mud, in some places more than a hundred, and nowhere less than twenty-five, yards in width, intervened between the water and the beds of reeds and rushes, whilst the areas on which the *Polygonum* grows were high and dry. The pumping of water for the use of the canal and the phenomenally low rainfall caused a constant shrinkage in the water area during the spring and summer, and by early autumn the bed of Little Tring Reservoir was dry altogether, whilst the area of the other pools was only about a third of the normal ; the depth of the water was, of course, much reduced. The fertile mud produced an amazingly luxuriant crop of vegetation, but what in September was a breast-high jungle of willow saplings, goose-foot and other plants was, during the Grebes' breeding-season, an expanse of mud which effectually debarred them from their accustomed nesting-places.

At the end of November, 1933, there were eight birds on the reservoirs, but hard frost in the second week of December banished them. On December 12th there was none, but on the 23rd a single bird was on a small patch of open water in the ice on Wilstone ; it was not there on the 31st nor on January 1st or 8th, but on January 13th and on ten different occasions between then and February 16th there was a single bird on this reservoir. On February 20th there were four—on three different reservoirs—but on the 24th only one; the birds seen on the 20th were presumably on passage. There were seven birds—including a party of six—on Wilstone on February 27th, but none elsewhere. As there were only four—on three different reservoirs—on March 1st, the inference seems warranted that the birds seen on February 27th were on passage too. By March 6th there was a big increase; twenty-six birds—some engaging in shaking-bouts—were on two reservoirs; and on March 21st fifty-five, on three. Some of these were probably passage birds, for I did not see so many subsequently. My next visit to the reservoirs was not until April 22nd, but between that date and May 17th I was there frequently. Absence from home prevented my going again until June 14th.

The following table suggests that, even when definitely paired, some of the birds moved about from one pool to another, and it opposes any idea of the annexation of definite territory in the beds of reeds and rushes, which indeed was, in the circumstances, impossible. It shows that there was a falling-off from the peak of abundance on May 10th and 12th, but whether this was due to some of the birds being on passage or to the premature departure of birds which would, in the ordinary course, have nested, is not clear. It is certain that the total number at the reservoirs was less than usual, for in addition to the twenty-five to thirty pairs of nesting birds there is, in normal seasons on Startop's End, a loosely-spread flock of maybe thirty non-breeders.

	Wilstone.	Startop's End.	Marsworth.	Little Tring.	Total.
April 22nd ...	19	7	6	15	47
,, 24th ...	12	10	6	13	41
,, 25th ...	17	4	6	14	41
May 5th ...	22	4	6	11	43
,, 7th ...	24	6	6	8	44
,, 10th ...	33	2	6	9	50
,, 12th ...	35	0	6	8	49
,, 15th ...	22	0	6	7	35
,, 17th ...	21	0	5	5	31
June 14th ...	23	5	2	2	32

At Wilstone, especially from mid-May onwards, there was a diminishing tendency for the birds to segregate in definite pairs. On May 12th twelve were gathered on a small, isolated pool, and most of the remaining twenty-three were associated in a loose flock, but there was some evidence of



Abnormal nest of Coot on dry mud, Little Tring Reservoir.
(*Copyright photograph by* O. G. Pike.)

pairing in frequent shaking-bouts. On May 15th and 17th eighteen were in a loose flock, as were all the birds on June 14th; but on each occasion shaking-bouts were engaged in. At Startop's End the birds seen between April 25th and May 10th were obviously paired; the five on June 14th comprised two pairs and an odd bird. At Marsworth the six birds that were always present between April 22nd and May 15th comprised three obvious pairs. At Little Tring the fourteen birds on April 25th comprised seven obvious pairs, but, despite occasional shaking-bouts, the five on May 17th did not seem definitely to be paired; the two on June 14th were an obvious pair.

I was not able to go again to Tring until July 6th; the only Grebes then on the reservoirs were two—on Wilstone—and on July 11th there was only one, which was possibly under some disability for I saw it frequently, always in the same place, approximately, until November 12th, but not thereafter; and whether it died or left the place for its winter quarters in the ordinary course I do not know. When the other thirty birds that had been present on June 14th left, and whether they went gradually or all at once, I could not learn, but it is certain that by July 6th virtually all the Grebes had evacuated the reservoirs.

I never saw any attempt at nest building, but was told by the keepers that in early June a pair gathered a little nesting material and deposited it in shallow water on the muddy margin of Little Tring, but that as the water shrank they abandoned it. This scanty foundation was taken over by a pair of Coots (*Fulica a. atra*) which, not finding their usual material at hand, collected a few small sticks, a piece of coarse string and a number of shells of the swan mussel (*Anodonta cygnea*), with which the dried mud was strewn. No eggs were laid* and this effort of the Coots, abortive indeed, was like that of the Grebes, so far as I could learn, unique. At no time during the spring or summer did I hear of any eggs being dropped on the mud or in the shallow water, although if any such there were they would probably be picked up and carried away by the Crows (*Corvus corone*).

There is evidence that the Great Crested Grebe has some slight power of accommodation to unusual circumstances† but its nesting is a highly-specialized affair and correspondingly inelastic; the intervention of a belt of dry land between the water and the reed-beds was an insuperable obstacle, a violent interruption to their routine and something quite beyond the birds' powers to adjust. Unfortunately, we have no knowledge of the state of the birds' gonads when they left the reservoirs, nor do we know whether the urge to nest still persisted, nor whether all or any of them did actually nest, and, if so, where. Food shortage was not the reason of the Grebes' exodus. The shrinking waters implied a congestion rather than a scarcity of fish, and made their capture more easy. At Little Tring many fish were removed by netting as the water receded, and it was only in the last phase of drying up that the survivors were stranded and died; their abundance was then revealed; stranded on the mud I counted between a hundred and a hundred and twenty large roach (*Rutilus rutilus*) and smaller fish innumerable. Inability to achieve nesting-sites seems the most likely, and, at the first blush, the obvious reason for the Great Crested Grebes' failure, and a like explanation may meet the case of the Dabchick (*Podiceps r. ruficollis*) and even those of the Pochard (*Nyroca f. ferina*) and Coot, which incline to build their nests in the water, but this reason and shortage of food seem alike insufficient to explain the abstention of the Tufted Duck (*Nyroca fuligula*). The problem is not simplified by the fact that whilst none of these species nested at the reservoirs, the Mallard (*Anas p. platyrhyncha*) and Shoveler (*Spatula clypeata*) bred in their usual numbers.

---

*The eggs shown in the photograph were "property" eggs, put in the nest to help the picture.

†Harrisson, T. H., and Hollom, P. A. D., *B.B.*, XXVI., pp. 185-6; and Venables, L. S. V., and Lack, D., *ibid*, XXVIII., p. 195.

Conditions similar to those at Tring no doubt obtained at reservoirs elsewhere, and it seems likely that if a considerable surplus population of Grebes had to find new quarters at midsummer, all, or nearly all, the available nesting-sites—or territories—would be occupied already, unless indeed the territorial stress is released after the young are hatched and taken on to the open water, and therefore nesting-sites are set free which earlier in the year were occupied by birds that had a sort of prescriptive right to them. In the absence, however, of precise observations to show that there was an increase in the number of adult Great Crested Grebes on other, and in the exceptional circumstances, more suitable waters, about midsummer, and that such increase was due to the usurpation by aliens of newly-vacated sites, this is mere guesswork.

In normal seasons the status of the Great Crested Grebes seen in winter is obscured by the fact that numbers of the summer residents and their young stay until mid-November at any rate, and it has been assumed that the winter birds are really some of the summer stock which, for one reason or another, did not leave with their fellows in the autumn. The events of 1934, however, suggest that, whilst it is possible that some birds remain, the majority of those seen in the cold months are either on passage or have come to winter from elsewhere. From July to September 12th no Grebe was seen other than the single bird that was on Wilstone all the summer, but on that date there was on the same reservoir a full-grown bird of the year ; it was not there on the 16th, but an adult and a bird of the year were then on Startop's End ; neither was there on the 19th, nor was there any stranger on the 20th. On the 25th there was a bird of the year on Wilstone. My next visit was on October 20th, when there was a single bird on Startop's End. There were three in a group on the 25th on Wilstone. These occurrences seem to indicate an autumn passage. No stranger was seen on October 27th, 29th, November 1st or 7th, but on November 12th there were two birds on Wilstone. They were seen, always about the same part of the reservoir, on November 19th, 23rd, 26th, December 1st, 9th, 16th—on this day a third Grebe, aloof from the other two, was on the water—and 23rd, and are still (December 29th) there, where, presumably, they will remain unless expelled by frost. On some of the many visits to the reservoirs in winter during the past twenty-five years I have made notes of the Grebes, if any, seen. If the figures for the first half of November and the first half of February, which are undoubtedly influenced by the departure and arrival of the breeding stock, be ignored, these notes, when tabulated, with dates adjusted to the 1st and 15th of each month, give some support to the evidence of an autumn passage.

	Nov.		Dec.		Jan.		Feb.		
	1	15	1	15	1	15	1	15	
1909-10 ...	—	1	1	0	—	—	—	1	—
1910-11 ...	—	17	5	9	8	2	2	1	8 on Jan. 12th. Hard frost, Jan. 13th and 14th.
1911-12 ...	17	—	12	0	4	0	2	5	—
1912-13 ...	—	8	11	9	7	11	10	—	—
1913-14 ...	—	—	4	6	2	—	2	9	Frost in first week of Jan.
1914-15 ...	7	12	14	9	0	2	1	3	—
1915-16 ...	—	—	—	8	8	18	22	—	—
1916-17 ...	—	5	—	—	—	11	1	0	None on Feb. 3rd, hard frost.

	Nov.		Dec.		Jan.		Feb.		
	1	15	1	15	1	15	1	15	
1917-18 ...	—	—	20	—	1	4	—	—	3 on Dec. 22nd, hard frost.
1918-19 ...	—	—	—	—	12	12	12	—	—
1919-20 ...	—	—	—	—	4	—	4	24	—
1920-21 ...	—	—	6	6	0	5	12	—	Dec. 15th, hard frost.
1921-22 ...	—	—	—	0	1	0	3	1	Feb. 5th, hard frost.
1922-23 ...	1	0	—	1	1	0	0	4	—
1923-24 ...	14	20	1	2	0	0	4	6	Nov. 25th, hard frost.
1924-25 ...	20	9	15	18	21	25	22	—	—
1925-26 ...	—	12	3	0	1	3	10	—	Dec. 5th, hard frost; again, Jan. 17th.
1926-27 ...	—	—	9	—	3	5	5	13	—
1927-28 ...	17	6	5	1	1	4	9	27	—
1928-29 ...	—	24	18	7	4	6	1	0	Only 8, Nov. 28th; 7, Dec. 6th; 0, Jan. 24th.
1929-30 ...	21	6	8	4	1	1	5	14	—
1930-31 ...	—	—	22	21	21	4	6	—	Hard frost, first week of Jan.
1931-32 ...	—	—	12	14	6	14	17	17	20, Jan. 25th.
1932-33 ...	30	32	9	2	1	1	0	5	Hard frost, second half of Jan.
1933-34 ...	—	8	4	0	0	1	1	1	Hard frost, second week Dec. and later.
Average...	16	11	9	6	5	6	7	8	

The figures show clearly that in most winters there are frequent and considerable fluctuations in the numbers present. Severe frost banishes the birds, but some at any rate return when the waters are open again. Whether the frozen-out birds go to the sea or to other inland waters, such as the low-lying reservoirs in the Thames and Lea Valleys, where the conditions are less austere than in the bleaker and more exposed country at Tring, is, in our present ignorance, mere matter for conjecture. The evidence does suggest, however, that, apart from frost, some small and irregular traffic takes place between Tring and other waters such as the Weston Turville Reservoir, four miles away, those big winter resorts, the reservoirs in the valleys of the Thames and Lea, or places even further afield. The average numbers decline steadily between the beginning of November and mid-January, and then rise steadily until the breeding stock is installed.

THE FOOD OF CERTAIN BIRDS OF PREY.*

BY

R. H. BROWN.

THESE data were obtained in Westmorland during 1934, except the food recorded under the Heron, which was disgorged by young Herons in the heronry at Crofton, Cumberland. The food recorded for the two species of Owl was found at the nests of young; that recorded for the Hawks was either found at the feeding-places or else at the eyries.

TAWNY OWL (*Strix a. sylvatica*).—*May* 7th: 1 Song-Thrush, 1 rabbit. 19th: 1 Starling, 1 brown rat. *June* 2nd: 2 Starlings.

BARN-OWL (*Tyto a. alba.*).—*May* 16th: 1 long-tailed field-mouse, 1 short-tailed field-mouse, 1 common shrew. 19th: 1 short-tailed field-mouse. 24th: 1 brown rat, 1 long-tailed field-mouse, 1 common shrew. 27th: 1 long-tailed field-mouse, 1 water shrew. *June* 1st: 1 brown rat. 8th: 3 moles, 1 short-tailed field-mouse. 14th: 1 Blackbird, 1 mole, 1 long-tailed field-mouse. 20th: 1 Swallow, 1 mole. 28th: 2 moles.

PEREGRINE FALCON (*Falco p. peregrinus*).

Eyrie No. 1.—*March* 22nd: 1 Snow-Bunting, 1 Pigeon. *May* 18th: 1 Starling, 2 Pigeons. *June* 3rd: 1 Pigeon. 29th: 1 Song-Thrush, 1 Lapwing, 1 Wood-Pigeon, 2 Homing Pigeons. *August* 5th: 2 Jackdaws, 1 Pigeon.

Eyrie No. 2.—*March* 18th: 1 Snow-Bunting, 1 Blackbird, 1 Song-Thrush, 1 Golden Plover, 2 Homing Pigeons. *May* 23rd: 1 Blackbird, 1 Song-Thrush, 1 Pigeon, 3 Golden Plovers, 1 rabbit. *June* 5th: 2 Blackbirds, 3 Starlings, 2 Song-Thrushes, 1 Homing Pigeon. *June* 15th: 1 Rook, 1 Golden Plover, 4 Homing Pigeons. *October* 26th: 1 Blackbird, 2 Starlings, 1 Lapwing, 1 Homing Pigeon, 2 Wood-Pigeons.

Eyrie No. 3.—*March* 29th: 1 Starling, 1 Blackbird, 1 Golden Plover, 1 Wood-Pigeon, 2 Pigeons. *May* 21st: 1 Song-Thrush, 1 Wood-Pigeon, 1 Pigeon. 31st: 1 Golden Plover, 2 Pigeons. *June* 16th: 1 Song-Thrush, 1 Curlew, 1 Golden Plover, 4 Pigeons. *October* 18th: 1 Curlew, 2 Pigeons.

Eyrie No. 4.—*March* 28th: 1 Starling, 1 Red Grouse. *April* 30th: 1 Starling, 1 Song-Thrush, 1 Pigeon. *May* 8th: 2 Starlings, 1 Song-Thrush, 1 Lapwing, 1 Pigeon. 14th: 2 Song-Thrushes, 1 Redshank, 1 Common Gull, 2 Pigeons. 22nd: 1 Song-Thrush, 2 Blackbirds, 1 Curlew, 1 Red Grouse,

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* For previous similar records see Vol. XXIII., pp. 269-72.

3 Pigeons, 1 short-tailed field-mouse. *June* 5th: 1 Starling, 1 Red Grouse, 2 Pigeons. 12th: 2 Red Grouse, 5 Pigeons. *July* 21st: 2 Starlings, 2 Blackbirds, 2 Pigeons.

MERLIN (*Falco c. æsalon*).—*July* 8th: 1 short-tailed field-mouse, 2 long-tailed field-mice. 15th: 1 Meadow-Pipit, 1 Wheatear, several oak-eggar moths.

KESTREL (*Falco t. tinnunculus*).—*May* 13th: 1 Starling, 1 Blackbird. *June* 4th: 1 Sky-Lark. 12th: 1 Sky-Lark, 1 Song-Thrush. 26th: 1 Song-Thrush, 1 Long-tailed Tit, 1 nestling Lapwing. *July* 15th: 1 Greenfinch, 2 long-tailed field-mice.

COMMON BUZZARD (*Buteo b. buteo*).

Eyrie No. 1.—*May* 25th: 1 short-tailed field-mouse, 3 rabbits. *June* 5th: 1 Sky-Lark, 2 rabbits. 13th: 1 Meadow-Pipit, 1 water-rat, 2 rabbits. 29th: 3 young Red Grouse, 2 rabbits.

Eyrie No. 2.—*May* 25th: 1 short-tailed field-mouse, remains lamb. *June* 5th: 2 rabbits. 13th: 1 common shrew, 1 Wood-Pigeon. 29th: 1 Meadow-Pipit, 6 rabbits.

Eyrie No. 3.—*May* 22nd: 1 mole, 5 rabbits. 29th: 4 short-tailed field-mice, 1 rabbit. *June* 4th: 2 Meadow-Pipits, 1 mole, 1 young stoat, 2 short-tailed field-mice, 1 common shrew, 1 rabbit. 18th: 3 young Red Grouse, 1 long-tailed field-mouse, 2 rabbits.

Eyrie No. 4.—*May* 22nd: 2 Meadow-Pipits, 1 Wood-Pigeon, 1 rabbit. 29th: 2 rabbits. *June* 4th: 1 Wood-Pigeon. 18th: 4 rabbits.

SPARROW-HAWK (*Accipiter n. nisus*).

Eyrie No. 1.—*March* 29th: 1 Song-Thrush. *April* 20th: 2 Song-Thrushes, 2 Starlings. 27th: 1 Long-tailed Tit, 1 Song-Thrush, 1 Blackbird, 1 Magpie. *May* 21st: 1 Blue Tit, 1 Starling. *June* 6th: 1 Song-Thrush, 1 Blackbird, 1 Swallow. 23rd: 1 Chaffinch, 1 Greenfinch, 1 Song-Thrush, 2 Blackbirds, 1 young Lapwing.

Eyrie No. 2.—*April* 15th: 1 Sky-Lark. *May* 15th: 1 Greenfinch, 1 Blue Tit, 1 Blackbird. *June* 15th: 1 Song-Thrush, 2 Blackbirds, 1 Wood-Pigeon. 23rd: 1 Long-tailed Tit, 1 Greenfinch, 2 Blackbirds. 27th: 1 Greenfinch, 2 Song-Thrushes, 1 Blackbird. *July* 6th: 1 Goldfinch, 1 Blue Tit, 1 Meadow-Pipit, 2 Song-Thrushes.

COMMON HERON (*Ardea c. cinerea*).—*May* 31st: 3 eels, 1 water-rat. *June* 20th: 2 small trout, 2 eels, 5 minnows.

TIME OF SINGING OF THE GOATSUCKER.

BY

S. E. ASHMORE, B.SC., F.R.MET.S.

BELOW is an account of a preliminary investigation on the hours of commencement of the song of the Goatsucker (*Caprimulgus e. europæus*). The observations were carried out at intervals during the summers of 1932-4, in Surrey and Glamorgan. Continuous watch was, unfortunately, not possible throughout the whole of any of the summers. In general the bird has two spells of song during the twenty-four hours, one commencing soon after sunset and one beginning shortly before sunrise. On the mornings and evenings when observations were possible the time of commencement of song was recorded, together with the local time of sunrise or sunset, and also the weather conditions, presence or absence of moonlight, and other relevant material. After having begun singing, the song takes place in snatches, and finally ceases. As it was impossible to keep all-night watch, the duration of the morning and evening periods of song have not been recorded, and the material below refers only to the commencement of song.

The periods of song observed fell into three—(*a*) from June 5th to 9th ; (*b*) from July 11th to 20th ; (*c*) from August 2nd to 23rd ; probably owing to the observer not being available in the intervals, but also partly owing, perhaps, to the bird having periods during which it does not sing.

For the three periods the average time of commencement of churring, in minutes after sunset (in the case of evening) or before sunrise (in the case of morning song) were calculated, and are here set down.

June 5th to 9th	...	41 minutes.
July 11th to 20th	...	58 minutes.
August 2nd to 23rd	...	40 minutes.

The above figures are means for morning and evening.

It thus appears that the time before sunrise or after sunset of the commencement of song is greatest at the middle of the song season. For an explanation of this I should hazard that there is a connexion with the hour at which are found flying the moths and other creatures which form the bird's food.

The time interval at dawn was found to be different from that at dusk. Averages taken from the August period give the following results :—

Average time between start of song and sunrise, 50 minutes.
Average time between sunset and start of song, 35 minutes.

Hitherto I had regarded the Goatsucker as most regular in commencing its song to time—Gilbert White says that it is " . . . punctual in beginning song exactly at the close of day ". However, in the observations, the time of dusk song commenced at any time between 18 minutes and 101 minutes after sunset ; and at dawn song commenced at times varying between 123 minutes and 27 minutes before sunrise.

The chief factor causing variation in time was the intensity of the light. Occasions on which the presence of the moon (whether behind cloud or not) caused appreciable brightening of the landscape were separated out. The average time-interval for these occasions was worked out and compared with that for other occasions, as in the table :—

DAWN.	DUSK.
Time before sunrise.	*Time after sunset.*
Moonlight present 78 minutes.	Moonlight present 51 minutes.
Moonlight absent 40 minutes.	Moonlight absent 35 minutes.

When the reduction of light intensity is less rapid at dusk owing to moonlight, the Goatsucker commences churring at a later hour ; similarly, when the increase of light at dawn is made less rapid by the moon, churring commences earlier. In connexion with this, it may be mentioned that on a few occasions during thunderstorms, in the early part of the night, the bird continued, perhaps under the influence of the lightning, to sing to a much later hour than usual.

The correlation with weather conditions was not very satisfactory. No definite effect of temperature or humidity has been found. Dew is often present on the ground during the evening song period, which implies that the air in the vinicity of the bird, if it sings on the ground, has a relative humidity of 100 per cent.

Strong wind and moderate or heavy rain appear to inhibit song. No song has been heard with wind speed of more than about ten miles per hour. The bird takes little notice of drizzle or light rain, but ceases to sing on the incidence of heavier rain.

The amount of cloud and the transparency of the atmosphere had no apparent bearing on the time of song.

It is hoped to continue the observations for a number of summers to come, and to supplement the above results by others, with increased accuracy consequent on a larger amount of data.

RECOVERY OF MARKED BIRDS.

(*Concluded from page* 240.)

Greenfinch (*antea*, p. 237)—*Correction*—MN.364 was ringed at Frimley Green, Surrey, *not* Bootham, York.

Swift (*Apus a. apus*).

No.	*Ringed.*	*Recovered.*
SZ.982	Addlestone (Surrey), 28.4.29, ad., by P. Hollom.	Where ringed, 25.6.34, by ringer.
N.W.610	Brede (Sussex), 6.6.33, ad., for N. F. Ticehurst.	Where ringed, 23.6.34, by P. Allen.

Kingfisher (*Alcedo a. ispida*).

RINGED AS NESTLINGS.

N.W.415	Mid Pollok (Renfrew.), 25.5.33, for J. Bartholomew.	Netherlee (Renfrew.), 4.8.34, by P. Clancey.
N.W.483	West Pollok (Renfrew.), 2.7.33, for J. Bartholomew.	River Kittoch (Lanark.), 9.6.34, by P. Clancey.
MV.506	Clarkston (Renfrew.), 11.8.34, for J. Bartholomew.	Glasgow, 6.9.34, by *Glasgow Evening News*.

Short-eared Owl (*Asio f. flammeus*).

AK.818	Hickling (Norfolk), 16.5.33, young, by Mrs. Wilson.	Gozo, Malta, 24.10.34, by J. Grech.

Tawny Owl (*Strix a. sylvatica*).

AA.6622	Manchester (Lancs.), 31.5.33, young, by E. W. Nicholson-Smith.	Where ringed, 10.10.34, by A. Edwards.

Merlin (*Falco c. æsalon*).

RV.3339	Dunnet Head (Caithness.), 28.6.34, young, by Oxford Orn. Soc.	Mintlaw (Aberdeen.),—.8.34, by J. Hepburn.

Kestrel (*Falco t. tinnunculus*).

RV.2704	Mytton (Lancs.), 26.5.34, young, by C. Oakes and E. Battersby.	Upper Nidderdale (Yorks.), 25.7.34, by H. Jukes.

Montagu's Harrier (*Circus pygargus*).

AA.7434	Norfolk, 6.7.34, young.	Wrentham (Suffolk), 1.9.34, by W. Kay Robinson.
AA.8403	Ditto 22.6.34	Bawdsey (Suffolk), 10.8.34, by Sir C. Quilter.

Sparrow-Hawk (*Accipiter n. nisus*).

RV.3985	Wigton (Cumb.), 23.6.34, young, by E. Blezard.	Dalston (Cumb.), 18.9.34. by Major Salkeld.
RV.2523	Bisley (Surrey), 6.7.34, young, by P. Hollom.	Ash (Surrey), 16.12.34, by A. Hockley.

Heron (*Ardea c. cinerea*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
109163	Wigton (Cumb.), 5.5.32, by R. H. Brown.	Welton (Cumb.), 8.3.34, by ringer.
113071	Ditto 20.6.34	Newtown (Montgomery.), 10.9.34, by L. Williams.
107415	Wellington (Salop), 17.5.34, by W. A. Cadman.	River Usk (Brecon.),—.9.34, by F. Hawker.
113204	Rochester (Kent), 19.5.34, by P. Hollom.	Staines (Middlesex), 3.11.34, by W. Portsmouth.
112730	Beckley (Sussex), 5.5.34, by P. Hollom.	Brookland (Kent), —.8.34, by J. Tennent.

Mallard (*Anas p. platyrhyncha*).

RINGED AS YOUNG.

AA.7557	Scone Estate (Perth.), 21.7.33, by Lord Scone.	Chathill (Northumb.), 25.8.34, by W. Runciman.

RINGED AS FULL-GROWN.

AA.8522	Leswalt (Wigtown.), 8.3.34, by J. Law.	Store Heddinge (Sjælland), Denmark, 1.10.34, by F. Rasmussen.
AK.896	Ditto 6.3.33	Varde (Jylland), Denmark, 25.10.34, by C. Hansen.
AA.8505	Ditto 6.3.34	Where ringed, 18.9.34, by O. Porritt.
AA.8444	Molesey (Surrey), 10.2.34, by P. Hollom.	Datchet (Bucks.), 10.10.34, by P. Greener.

Teal (*Anas c. crecca*).

RT.9861	Leswalt (Wigtown.), 6.3.34, ad., by J. Law.	Where ringed, 16.9.34, by O. Porritt.
73098	Longtown (Cumb.), 1.3.33, ad., for late Sir R. Graham.	Kirtlebridge (Dumfries.), 6.10.34, by T. Graham.
RT.9030	Wolsingham (Durham), 3.6.34, young, by R. Martinson.	Edmundbyers (Durham), 26.10.34, by G. Hedley.

Tufted Duck (*Nyroca fuligula*).

AA.8442	Molesey (Surrey), 4.2.34, ad., by P. Hollom.	Guines (Pas-de-Calais), France, 16.7.34, by *Chasseur Francais.*
AA.8458	Ditto 20.1.34	Where ringed 24.12.34, by ringer.

Cormorant (*Phalacrocorax c. carbo*).

RINGED AS NESTLINGS.

113319	Mochrum (Wigtown.), 3.8.34, by Lord Dumfries.	Gretna (Dumfries.), 27.9.34, by R. Coombes.
113303	Ditto 3.8.34	Ulverston (Lancs.), 26.9.34, by R. Swainson.
113304	Ditto 3.8.34	Portaferry (Down), 15.9.34, by J. O'Neill; Portavogie (Down), 17.9.34, by W. Bailie.
113311	Ditto 3.8.34	Quimper (Finistère), France, 7.10.34, by E. Bleuzen.

Cormorant (*continued*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
114325	Mochrum (Wigtown.), 3.8.34 by Lord Dumfries.	Quimper (Finistère), France, 27.9.34, by P. Bureller.
113054	Skomer (Pembs.), 1.7.34, by R. M. Lockley.	Douarnenez (Finistère), France, 15.9.34, by J. Pitty.
113051	Ditto 7.7.34	Vannes (Morbihan), France, 9.10.34, by M. Gourrielec and I. R. A. Versailles.
113009	Ditto 1.7.34	Auray (Morbihan), France, 16.11.34, by P. Hervé.
113060	Ditto 1.7.34	Ars en Ré (Charente Inf.), France, 9.11.34, by M. Alligné.

Shag (*Phalacrocorax a. aristotelis*).

108874	Handa (Suth.), 6.7.31, young, by E. C. Sharp.	Loch Inchard (Suth.), —.12.33, by H. F. Buxton and G. McKay.
103893	Sheep I. (Antrim), 8.7.34, young, by T. Kerr.	Rosslare (Wexford), 18.12.34, by J. Maddock.

Gannet (*Sula bassana*).

RINGED AS NESTLINGS.

113885	Ailsa Craig, 25.8.34, by Lord Dumfries.	Bangor (Down), 7.11.34, by A. Chambers.
114236	Ditto 25.8.34	Glandore (Cork), 27.9.34, by Capt. Townshend.
113859	Ditto 25.8.34	Fuenterrabia (Guipuzcoa), Spain, 26.11.34, by D. Bontigui.
112367	Grassholm (Pembs.), 2.7.33, by R. M. Lockley.	Walton - on - Naze (Essex), —.7.34, by E. Staniland.
20 Birds	Ditto 17.7.34, by C. Wontner-Smith.	Coasts of Wales, from 4.8.34 to 7.10.34.
116092	Ditto 17.7.34	St. Mary (I. of Man), 20.9.34, by F. Ward.
115614	Ditto 17.7.34	St. Agnes (Cornwall), 19.9.34, by G. Carloss.
115910	Ditto 17.7.34	Ditto 21.9.34, by Mr. Stooke.
116060	Ditto 17.7.34	Inishowen Head (Donegal), 14.9.34, by P. Cornish.
116879	Ditto 17.7.34	Fethard-on-Sea (Wexford), 1.10.34, by Serjt. Mahony.
115256	Ditto 17.7.34	Moelan s. Mer (Finistère), France, 3.9.34, by A. Chappellier.
116011	Ditto 17.7.34	I. de Noirmoutier (Vendée), France, 5.9.34, by G. Démé.
115302	Ditto 17.7.34	Biarritz (Basses Pyrénées), France, 6.10.34, by P. Arné.

Gannet (*continued*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
116396	Grassholm (Pembs.), 17.7.34, by C. Wontner-Smith	Biarritz (Basses Pyrénées), France, 28.9.34, by R. Grilli.
115569	Ditto 17.7.34	Fuenterrabia (Guipuzcoa), Spain, 28.9.34, by A. Campandegui.
116301	Ditto 17.7.34	Santoña (Santander), Spain, 6.9.34, by C. Albo.
116074	Ditto 17.7.34	Comillas (Santander), Spain, 9.9.34, by M. Llano Bona.
116740	Ditto 17.7.34	S. Vicente (Santander), Spain, 8.10.34, by C. Chabat.
115304	Ditto 17.7.34	Villaviciosa (Asturias), Spain, —.9.34, by D. Fresno.
115544	Ditto 17.7.34	Ribadesella (Asturias), Spain, 4.10.34, by A. Garcia.
116489	Ditto 17.7.34	C. Ortegal (Coruña), Spain, 6.9.34, by A. Lago.
115033	Ditto 17.7.34	Gibraltar, —.10.34, by de Torres and Sons.
115225	Ditto 17.7.34	Off Mauritania, 20°40′N. 17°30′ W., 20.12.34, by P. Madec.

RINGED AS FULL-GROWN.

No.	*Ringed.*	*Recovered.*
112409	Grassholm (Pemb.), 21.7.33, by R. M. Lockley.	Where ringed, 17.7.34, by ringer.
112492	Ditto 2.7.33	Ditto 17.7.34.
115159	Ditto 17.7.34, by C. Wontner-Smith.	Anglesey, 22.9.34, by C. Williams.

Storm-Petrel (*Hydrobates pelagicus*).

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered*
Skokholm (R. M. Lockley, also Miss Staunton).		
MD.172	26.7.33	18.6.34
MD.192	26.7.33	5.7.34

No.	*Ringed.*	*Recovered.*
TY.229	16.7.33	5.7.34
TY.231	8.7.33	15.6.34
TY.233	14.7.33	16.6.34
F.3641	19.7.33	4.7.34

Manx Shearwater (*Puffinus p. puffinus*).

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
Skokholm (R. M. Lockley).		
RS.2246	9.5.29	29.3.30 ;
[AE.681]	[4.5.31; 21.3.32;	14.4.34
RS.2281	1.4.33	14.4.34
RS.2283	2.4.33	13.8.34
RS.2284	5.5.30	13.5.31 ;
[AG.702]	[29.3.32; 2.4.33;	8.5.34
[RS.2272]		
RS.2285	24.6.31	7.4.33 ;
[RS.2263]		22.3.34

No.	*Ringed.*	*Recovered.*
RS.2286	24.5.31	28.3.32 ;
[RS.2279]		[3.4.33 ; 7.4.34
RS.2289	5.5.30	11.5.31 ;
[AG.701]	[28.3.32; 2.4.33;	7.4.34
[RS.2259]		
RS2290	1.4.33	15.5.34
RS.2291	15.5.29	29.3.30 ;
[AE.682]	[2.5.31; 21.3.32;	1.4.33;
[RS.2256]		[14.4.34
RS.2292	2.4.33	15.5.34

Manx Shearwater (*continued*).

RINGED AS FULL-GROWN.

(*d*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
RS.2296	2.4.33	25.3.34
RS.2297	6.5.31	2.4.33 ;
[RS.2255]		13.8.34
RS.2298	14.5.31	28.3.32 ;
[RS.2247]		[1.4.33; 14.4.34
RS.2299	24.6.31	21.3.32 ;
[RS.2271]		[7.4.33; 22.3.34
RS.2300	7.4.33	1.4.34
RS.2301	13.4.33	7.4.34
RS.2302	17.4.33	1.6.34
RS.2303	14.5.31	8.4.33 ;
[RS.2258]		7.4.34
RS.2305	17.4.33	1.6.34
RS.2306	25.4.33	14.4.34
RS.2309	15.4.33	14.4.34
RS.2310	15.4.33	14.4.34
RS.2314	8.5.33	4.5.34
RS.2317	25.4.33	2.4.34
RS.2320	9.5.33	22.4.34
RS.2326	29.6.33	14.4.34
RS.2327	19.5.31	10.5.33 ;
[RS.2262]		7.4.34
RS.2330	29.6.33	14.4.34
RS.2335	16.5.33	16.8.34
RS.2340	28.5.33	14.4.34
RS.5300	29.6.33	14.4.34
Skomer (F. J. Mitchell).		
RT.4877	23.6.33	14.6.34

Wood-Pigeon (*Columba p. palumbus*).

No.	*Ringed.*	*Recovered.*
RS5949	Glenorchard (Stirling.), 7.5.32, young, by J. Bartholomew.	Where ringed, 6.12.34, by ringer.

Stock-Dove (*Columba œnas*).

RT.5759	Shipley (Yorks.), 20.5.33, young, by C. Wontner-Smith.	Leeds (Yorks.), 13.9.34, by B. Anson.
RT.5766	Ditto 23.7.33	Selby (Yorks.), —.7.34, by A. Burton.

Turtle-Dove (*Streptopelia t. turtur*).

RS.2024	Great Budworth (Ches.), 26.7.32, young, by A. W. Boyd.	Pte. de Grave (Gironde), France, 28.5.34, by *Chasseur Francais*.

Stone-Curlew (*Burhinus œ. œdicnemus*).

RT.6473	Oxfordshire, 31.5.34, young, by Oxford Orn. Soc.	Barques (Seine Inf.), France, 16.11.34, by M. Lecuir and Dr. Regnier.

Lapwing (*Vanellus vanellus*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

U.1390	Logiealmond (Perth.), 4.6.29, by Lord Scone.	Rockcorry (Monaghan), 8.12.34, by S. Gillis.
AR.6032	Dalston (Cumb.), 28.5.34, by R. H. Brown.	Port Carlisle (Cumb.), 23.8.34, by N. Bell.
AN.1065	Southwaite (Cumb.), 24.6.34, by E. Blezard.	Kirkpatrick Fleming (Dumfries.), 7.10.34, by J. Collinge.
AN.1148	Penrith (Cumb.), 23.5.31, by M. H. Morley.	Athy (Kildare), Feb. or Mar., 1934, by P. Doyle.
AP.7085	Ditto —.5.33, by H. J. Moon.	Wigton (Cumb.), 26.12.34, by K. Spark.

Lapwing (*continued*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
AR.1280	Langwathby (Cumb.), —.6.34, by H. J. Moon.	Curthwaite (Cumb.), —.10.34, by E. Blezard.
R.8245	Shap (Westmor.), —.6.30, by H. J. Moon.	Arnside (Westmor.), 27.5.34, by W. Howe.
AP.4805	Ditto —.6.32	Mallow (Cork), 18.11.34, by T. Burke.
AR.545	Ditto —.6.33	Navan (Meath), 11.12.34, by B. Fitzherbert.
AR.6711	Ribblehead (Yorks.), 27.5.34, by H. J. Moon.	Bowes (Yorks.), 15.11.34, by L. Forrester.
AR.1546	Clapham (Yorks.), 26.5.34, by H. J. Moon.	Kirkham (Lancs.), 9.12.34, by J. Roberts.
200517	Malham (Yorks.), 27.5.34, for British Trust Orn.	Dewsbury (Yorks.), 13.10.34, by J. Blackburn.
97580	Lancaster, 14.6.33, by H. W. Robinson.	Edenderry (King's Co.), 12.11.34, by J. Mulvin.
T.9446	Canterbury (Kent), 30.5.29, for St. Edmund's Sch.	Sandwich (Kent), 1.9.34, by J. Smith.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
T.8109	Penrith (Cumb.), —.5.29, by H. J. Moon.	16.7.34.
AN.4095	Ditto —.6.32.	—.12.34.

Redshank (*Tringa t. totanus*).

No.	*Ringed.*	*Recovered.*
GL.120	Carnforth (Lancs.), 14.6.34, young, by H. J. Moon.	Lorient (Morbihan), France, 9.9.34, by P. Desbrosses.

Curlew (*Numenius a. arquata*).

RINGED AS NESTLINGS.

RT.4833	Wolsingham (Durham), 18.6.33, by R. Martinson.	Castlebar (Mayo), 22.10.34, by R. Quinn.
AA.9148	Troutbeck (Cumb.), 7.6.34, by H. J. Moon.	Easkey (Sligo), 7.10.34, by J. Borland.
AL.206	Clapham (Yorks.), —.6.32, by H. J. Moon.	Lancaster, 1.11.34, by H. W. Robinson.

Snipe (*Capella g. gallinago*).

RR.2723	Upper Teesdale (Durham), 8.7.27, young, by Oxford Orn. Soc.	Where ringed, 3.10.34, by L. Penman.

Woodcock (*Scolopax r. rusticola*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

AR.5661	Glenferness (Nairn), 1.5.34, for Brit. Trust Orn.	Dunphail (Moray.), 1.11.34, by H. L. Tabor.
AR.5666	Ardclach (Nairn), 21.5.34, for Brit. Trust Orn.	Westerton (Moray.), 5.11.34, by *The Field*.
AR.4565	Isle of Rum, 22.6.34, by Midlothian O.C.	Ardvasar, I. of Skye, 12.10.34, by E. Loyd.
P.4482	Redgorton (Perth.), 6.5.31, by Lord Scone.	Rollag, Numedal, Norway, 13.5.32, by E. Warnerson.

Woodcock (*continued*).

RINGED AS NESTLINGS.

(*a*) RECOVERED AWAY FROM WHERE RINGED.

No.	*Ringed.*	*Recovered.*
200719	St. Andrew's (Fife.), 10.6.34, for Brit. Trust Orn.	Castro Urdiales (Santander), Spain, 2.12.34, by L. Ternandez.
AR.4125	Stobo (Peebles), 15.5.34, for F. R. S. Balfour.	Borthwick (Midlothian), 22.12.34, by Dr. D. Inch.
AR.115	Kirkmichael (Dumfries.), 8.6.34, for W. Duncan.	West Calder (Midlothian), 23.10.34, by G. Normand.

(*b*) RECOVERED WHERE RINGED.

No.	*Ringed.*	*Recovered.*
AS.781	Bridge of Allan (Stirling.), 29.5.34, for Brit. Trust Orn.	21.7.34.
AS.769	Killearn (Stirling.), 29.7.34, for Brit. Trust Orn.	6.10.34.
200681	Leslie (Fife.), 2.6.34, for Brit. Trust Orn.	3.7.34.
AP.8434	Newton Stewart (Kirkcudbr.), 27.5.33, by Col. Blair Imrie,	3.11.33.
AP.6987	Wickham (Hants.), 1933, by Commander Cornwallis,	Summer, 1933.

Sandwich Tern (*Sterna s. sandvicensis*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
AR.4446	Salthouse (Norfolk), 15.6.34, by R. M. Garnett.	Skipsea (Yorks.), 12.8.34, by J. Reddyhoff.
AR.4284	Ditto 15.6.34	Salnelles (Calvados), France, 26.8.34, by *Chasseur Français*.
P.6278	Ditto 27.6.31	Ver (Calvados), France, 3.8.34, by Mlle. Schmitt.
AR.1005	Ditto 6.6.33, by E. Cohen.	Keta, Gold Coast, 3.9.34, by A. Harding.

Common Gull (*Larus c. canus*).

RS.4217	Dornoch (Suth.), 3.7.32, young, by E. Cohen.	Strathpeffer (Ross.), 13.7.34, by T. Wallace.
RT.2745	Ditto, ad. 14.7.32	Embo (Suth.), 6.7.34, by R. Mackay.

Herring-Gull (*Larus a. argentatus*).

RINGED AS NESTLINGS.

AA.7055	St. Abb's (Berwick.), 2.7.34, by Oxford Orn. Soc.	Patrington (Yorks.), 5.10.34.
AA.8810	Dungeness (Kent), 9.6.34, by N. F. Ticehurst.	Newhaven (Sussex), —.9.34, by D. Beaumont.
AA.9532	Point Grosnez, Jersey, 24.6.34, for L.N.H.S.	St. Nazaire (Loire Inf.), France, 1.11.34, by R. Thourimberg.
AA.8708	Ballintoy (Antrim), 9.6.34, by T. Kerr.	Londonderry, 6.10.34, by E. Sweeney.
400084	Benbane Hd. (Antrim), 22.6.34, by T. Kerr.	Bagillt (Flint.), 22.9.34, by R. Evans.
400230	Ditto 22.6.34	Lough Foyle (Donegal), 9.9.34, by W. White.

Lesser Black-backed Gull (*Larus f. graellsii*).

RINGED AS NESTLINGS.

No.	*Ringed.*	*Recovered.*
400785	Foulshaw (Westmor.), 27.7.34, by H. W. Robinson.	St. Coombs (Aberdeen.), 25.8.34, by P. Buchan & Co.
400766	Ditto 24.7.34.	Lancaster, 19.9.34, by H. Stirzaker.
402394	Ditto 27.7.34.	Leeds (Yorks.), —.10,34, by A. Gilpin.
AA.5547	Ditto 16.8.33.	Korsor (Sjælland), Denmark, 1.8.34, by C. C. Andersen.
AA.9468	Walney I. (Lancs.), 17.6.34, by H. W. Robinson.	Lockerbie (Dumfries.), —8.34, by T. Carruthers.
AA.9397	Ditto 10.6.34.	Preston (Lancs.), 12.8.34, by E. Halsall.
AA.5721	Ditto 10.6.34.	Hoylake (Ches.), 7.11.34, by J. Cullen and G. Price.
AA.5668	Ditto 3.6.34.	Frodsham (Ches.), 11.9.34, by D. Hopley.
400545	Ditto 28.6.34.	River Douro, Portugal, —10.34, by W. A. Tait.

Kittiwake (*Rissa t. tridactyla*).

RT.6683	St. Abb's (Berwick.), 22.7.34, young, by Midlothian O.C.	Off Göteborg, Sweden, 22.8.34, by Prof. L. Jägerskiöld.

Razorbill (*Alca torda*).

RV.5727	Skokholm (Pembs.), 18.7.34, young, by C. Wontner-Smith.	Bangor (Carnarvon.), 22.9.34, by G. Griffith.
RV.5013	Ditto 14.7.34, by R. M. Lockley.	Loch Long (Argyll.), 29.10.34, by A. Black.
RS.5370	Ditto, ad. 6.7.33.	Where ringed, 10.7.34, by ringer.
RT.9156	Ditto 10.7.33.	Ditto 12.7.34.

Southern Guillemot (*Uria a. albionis*).

RINGED AS NESTLINGS.

RV.5002	Skokholm (Pembs.), 14.7.34, by R. M. Lockley.	Newquay (Cornwall), 24.9.34, by H. Mansbridge.
RV.6554	Ditto 20.7.34, by C. Wontner-Smith.	Bangor (Down), 4.10.34, by E. Watson.
RV.5149	Skomer (Pembs.), 14.7.34, by C. Wontner-Smith.	Trevose Head (Cornwall), 1.10.34, by E. Ryle.
RV.5392	Ditto 14.7.34.	Etel (Morbihan), France, 4.10.34, by D. Remy.

Puffin (*Fratercula a. grabæ*).

RS.2338	Skokholm (Pembs.), 29.6.33, ad., by R. M. Lockley.	Where ringed, 14.6.34, by ringer.

Moor-Hen (*Gallinula ch. chloropus*).

RT.6458	Tenterden (Kent), 26.5.34, young, by N. F. Ticehurst.	Woodchurch (Kent), 5.11.34, by F. Astley.

Coot (*Fulica a. atra*).

400325	Weybridge (Surrey), 8.7.34, young, by P. Hollom.	Molesey (Surrey), —.9.34, by ringer.

BIRDS SEEN IN THE NORTH ATLANTIC, AUGUST AND SEPTEMBER, 1934.

BY

K. B. ROOKE.

THESE notes were made when I was travelling as a member of the Public Schools Exploring Society Expedition (1934) on board the s.s. "Nova Scotia", between Liverpool and St. John's, Newfoundland, from August 3rd to 9th, and on the return voyage, on board the s.s. "Newfoundland", from September 12th to 18th. I am indebted to their respective navigating officers for all information as to the position of the ships, and to Furness, Withy & Co. for an accurate summary of the weather encountered. On both voyages we followed much the same route, round the north of Ireland. Our noon positions are given for each day and otherwise, except in a few cases, the time at which observations were made is given alone, as providing sufficient indication of our position. Our usual speed was from twelve to fourteen knots.

Several papers have appeared on the birds of the North Atlantic in recent volumes of *British Birds* (e.g. XXII., pp. 122-123; XXIV., pp. 266-274; XXV., pp. 156-158, and XXVI., pp. 271-272); the first two mentioned contain charts on which the observations included in the present paper may be followed. I have not made any special references to the notes included in the above papers, nor have I compared them with my own observations; this paper is intended solely to add a few more facts to the subject of North Atlantic birds; no doubt someone will draw the necessary conclusions when sufficient data have been published.

Outward Voyage:—

August 4th (55° 26′ N., 7° 26′ W.). Wind moderate W.S.W. until 9 a.m., then strong S.W.; within sight of the Irish coast from Belfast Lough to Tory I., between about 7.0 a.m. and 1.0 p.m., after which we lost sight of it owing to bad weather. In the neighbourhood of Belfast Lough, Terns were not uncommon, those that came close enough appeared to be Sandwich Terns (*Sterna sandvicensis*); near here, and again near Rathlin I., I thought I saw Fulmars (*Fulmarus g. glacialis*), but could not make sure. Between Rathlin I. and Inishtrahull, especially near the latter, Manx Shearwaters (*Puffinus puffinus*) were quite common, though I saw none later. Alcidæ were fairly frequent as long as we were not far from the coast. Of those that I identified, the Puffin

(*Fratercula a. grabæ*) was the commonest, while Guillemots (*Uria aalge* subsp.) and one Razorbill (*Alca torda*) were also seen. Only one Cormorant (*Phalacrocorax carbo*) was noted, and that was near Rathlin I. Of the Gulls following the ship, Herring-Gulls (*Larus argentatus*) were numerous, several British Lesser Black-backed Gulls (*L. f. graellsii*) were continually with them ; I only saw a few Great Black-backed Gulls (*L. marinus*). At 2.30 p.m., when some twenty-three miles from the mainland and in fifty-seven fathoms, several Lari were still following, but when I continued observations at 6.0 p.m. they had all gone, and the only Gulls following the ship were six Kittiwakes (*Rissa t. tridactyla*), one or two of which species had been following most of the day. Gannets (*Sula bassana*) had been fairly common all day, and eight or ten were still to be seen at this time, when we were in about ninety fathoms (about 55° 26′ N., 9° 32′ W.). There was a remarkable number of Fulmars following the ship at 6.0 p.m., whereas between 2.15 and 2.30 only three had been seen. It was obvious that here, in ninety fathoms, the ranges of the off-shore and pelagic communities overlapped, the two being represented by the Gannets and Fulmars respectively. From my notes it appears that only a few of the many Gannets and Herring-Gulls were in immature plumage.

August 5th (55° 14′ N., 17° 22′ W.). Light S.W. wind, freshening later ; cloudy. Fulmars were seen all day, but were not really numerous ; Great Shearwaters (*Puffinus gravis*) were much in evidence ; I saw ten together on one occasion. At 9.10 a.m. two birds, which I was at a loss to identify, passed astern, flying low over the water ; they were black and white with white wing-bars and with black extending down the throat to the upper-breast. The only birds they could have been, it seemed, were Oyster-Catchers (*Hæmatopus ostralegus*), but they seemed so out of place in that setting that I am still doubtful if they really were. At 10.35 a Gannet (immature) was seen, which seems to be unusually far out for the species. Kittiwakes were definitely scarce, but seen at intervals until 4.0 p.m. A Great Skua (*Stercorarius s. skua*) flew past the ship at 7.10 p.m., and disappeared in a southerly direction.

August 6th (54° 32′ N., 27′ 20′ W.). Light W. to S.W. wind, dull and some rain. Fulmars present in varying numbers throughout the day, but never very numerous ; Great Shearwaters as before. The most notable feature of the day's observations was the frequency with which Skuas were seen. Unfortunately, they rarely came close enough to be identified with certainty, except in the case of the Great Skuas. We saw two of the latter species, one at 9.40 a.m. and another an hour later ; the first one attacked a Great Shearwater and both fell fluttering on to the water ; presumably the Skua was forcing it to disgorge. I think that the smaller Skuas were Pomatorhine Skuas (*S. pomarinus*) and immature Arctic or Long-tailed Skuas (*S. parasiticus* or *longicaudus*) ; at 4.30 p.m. ten of one of the last two species appeared on the port bow and passed astern, as had most of the others. This was the largest number I saw at once. At 9.25 a.m. I saw a Sooty Shearwater (*P. griseus*) ; no Kittiwakes were seen during the day.

August 7th (52° 54′ N., 36° 04′ W.). Wind S.W. to W., strong to light ; sea rough, visibility poor at times. Fulmars and Great Shearwaters fairly common. One or two small Petrels (sp. ?) were reported, but I did not see them. At 10.0 a.m. a small Skua (sp. ?) flew past, and was the only other species seen.

August 8th (50° 46′ N., 44° 23′ W.). Wind S.W. to W., moderate. Fine and clear. Just as on the 6th we ran into a belt of Skuas, so to-day we ran into a belt of Petrels ; they were fairly numerous nearly all day, but did not come very close to the ship. As far as I could tell, they were Leach's Petrels (*Oceanodroma l. leucorrhoa*). Fulmars were not common, but a few were usually to be seen ; Great Shearwaters were fairly numerous—in all of them the contrast between the dark crown and white throat was most noticeable; there were no signs of *P. kuhlii*, which is said to occur off Newfoundland. Three Skuas were seen during the morning, two of them probably Pomatorhine Skuas and the third an adult Long-tailed Skua.

August 9th (47° 51′ N., 51° 48′ W.). Fine and calm ; wind S.W. to W., light. At 10.0 a.m. two Gannets were seen, floating on the water, and thereafter were fairly common, though as we neared land no more were seen ; most of them were in adult plumage. We crossed the hundred-fathom line at 10.0 a.m. At 10.25 the first American Herring-Gulls (*L. a. smithsonianus*) appeared, and they, or others, followed for some time, though round noon none were seen for a short while. Two undoubted Pomatorhine Skuas were seen shortly after 10.0 a.m., and several more Skuas (sp. ?) at 10.35. At this time a Kittiwake was seen, and odd ones from then until we reached St. John's. A Black Guillemot (*Uria grylle*) flew past at 10.40 and another at 1.15 ; an Atlantic Puffin (*F. a. arctica*) was seen shortly before the latter. At 1.0 p.m.

a Sooty Shearwater flew near the ship, and a moment later I noticed that land was in sight. While still fairly far out, several small Petrels (Leach's) were seen. The first Great Black-backed Gull joined the ship at 1.15 p.m. and by 1.55 four were following. At 2.5 p.m., when only about two miles off St. John's, a Phalarope (sp. ?) flitted across close under our bows in a northerly (?) direction. As we approached the coast, Herring-Gulls had become increasingly numerous, and by the time we entered the harbour hundreds were wheeling in the air over the stern, many of them immature.

Return Voyage :—

September 12th. We sailed from St. John's at noon. Moderate N.W. wind, fine and clear. The only observations I made were that Herring-Gulls were less numerous than on August 9th, though Great Black-backed Gulls were seen as before ; two of the latter followed us out for some distance.

September 13th (50° 19′ N., 45° 15′ W.). Wind W. to S.W., fresh to strong ; rough sea, but fairly fine. Fulmars common, Leach's Petrels and Great Shearwaters fairly so. At 9.30 a.m. I was called on deck to see a small bird which had flown on board in an exhausted condition ; it proved to be a Redpoll (*Carduelis flammea* subsp.). I was unfortunately unable to obtain it. The wind was quite strong enough to have blown it out of its course, if it had been migrating from Greenland to Newfoundland, but hardly to have blown it out from Newfoundland direct, or from Labrador. Among other points that I noted while examining it at close quarters through ×6 glasses were the following :—It had a red forehead ; underparts well streaked (this makes it unlikely that it belonged to a race of *C. hornemanni*), white wing-bars, whitish edgings to most of tail-feathers, two almost white lines down centre of back, edged by three blackish lines (as far as I could see) ; general colour apparently paler than that of examples of *C. f. flammea* (=*Acanthis l. linaria* of A.O.U. nomenclature) seen in Newfoundland ; bill not very pointed. It was impossible to gauge its size accurately. From this description it would appear to have been a Greenland Redpoll (*C. f. rostrata*), and this is made more likely by the position of its occurrence, as has already been explained. After about a quarter of an hour it flew away and was not seen again.

September 14th (52° 36′ N., 36° 55′ W.). Strong N.W. wind, heavy sea. Fulmars numerous, Great Shearwaters fairly common ; several Sooty Shearwaters were seen at intervals, often quite close. A party of Terns (*Sterna* sp. ?) was noted at 11.0 a.m., a Skua (sp. ?) was harrying them ;

several other small Skuas were seen during the day, but were lacking in distinctive tail-feathers. About 1.0 p.m. two small birds flew alongside, but apparently did not settle; they were undoubtedly Wheatears (*Œnanthe œnanthe*). At 5.0 p.m. another Tern flew past the ship.

September 15th (54° 20′ N., 28° 01′ W.). Wind W.N.W., moderate to fresh; fine and clear. Great Shearwaters fairly common all day, Fulmars particularly numerous. A Kittiwake followed the ship for a short time about 11.30 a.m. Terns were seen in small parties several times during the day, but I could not make certain of the direction in which they were flying; presumably they were Arctic Terns (*Sterna macrura*). In the morning a Great Skua was seen to attack a Great Shearwater, in exactly the same way as was seen on August 6th, when we were in much the same longitude. Two small Skuas were seen in the morning, and during the afternoon they became really common (*cf.*, August 6th); three parties of fifteen or more passed the ship, and there were rarely less than two or three in sight. Most of those that came at all near were immature birds, but I saw one or more adult Pomatorhine and Long-tailed Skuas. About 8.0 a.m. a small Passerine was reported, evidently a Wheatear.

September 16th (55° 18′ N., 18° 30′ W.). Wind W. to S.W., moderate until 4.0 p.m., when it changed to E., freshening; rough sea, overcast and showery. Until 3.0 p.m. small Petrels were fairly common in the ship's wake, those that came near enough appeared to have forked tails and certainly had pale wing-bars; they were presumably Leach's Petrels. Fulmars were comparatively scarce, though I saw one or two all day; I saw no Great Shearwaters or Skuas. A Kittiwake followed the ship for a short time, about 2.0 p.m. Soon after this I was surprised to see a Wheatear flying among the Petrels in the wake of the ship; it seemed very exhausted and only managed to catch the ship up inch by inch; often it looked as if it were going to be swamped by the waves. A little later I noticed that three were following; after what seemed like an age one of them gained the comparative shelter of the forehatch, and I spent some time watching it there. Others were flying round the ship until 6.30 p.m., at which time one was caught in an exhausted condition; we were then in 55° 24′ N., 15° 50′ W. I skinned this bird, which proved to be a female Greenland Wheatear (*Œ. œ. leucorrhoa*). Its skin is now in the British Museum (Natural History). Its stomach was completely empty except that what looked like thick oil was adhering to the lining; possibly this is what it had picked up from the deck, in extreme hunger, for the bird that I watched had frequently appeared to peck at something on the deck, though whether it swallowed anything I did not see.

September 17th (55° 32′ N., 8° 52′ W.). Wind S.E., fresh to strong, changing to S.W. later. At 9.0 a.m. a Wheatear settled for a short time on the poop, but none were seen after that. At 11.0 a.m. a Swallow (*Hirundo r. rustica*) came on board and remained until about 1.0 p.m., by which time we were within sight of land, some fifteen miles off. During this time someone had seen four together on one occasion ; the one I examined was a young bird, without tail-streamers. At 12.0 p.m. Fulmars and Great Shearwaters were common in the wake, but by 1.15 they had disappeared. The first Gannet appeared at 11.30 a.m. (we crossed the hundred-fathom line at about 10.0 a.m.). A Great Skua flew past at 1.15 p.m., and at 1.40, when still ten or more miles from the Irish coast, a small wader that was probably a Turnstone (*Arenaria i. interpres*), was seen. At 2.30 the first few Herring-Gulls joined us, and as we drew in closer to the land they became commoner ; I saw only one British Lesser Black-backed Gull, two Great Black-backed Gulls and no Kittiwakes during the day. Near Inishtrahull several Puffins were seen and also a young Shag (*P. a. aristotelis*). The only other species noted was a Tern (sp. ?) near Rathlin I.

Summary :—

GREENLAND REDPOLL (*Carduelis f. rostrata*). A Redpoll, probably of this race, came on board on September 13th, when we were in about 50° 16′ N., 46° 22′ W. ; the wind on September 12th-13th had been between N.W. and S.W., strong on the latter date.

GREENLAND WHEATEAR (*Œnanthe œ. leucorrhoa*). Wheatears were seen round the ship as follows : September 14th (2), 15th (1), 16th (several) and 17th (1, early). This was between long. 36° 50′ W. and 10° W. ; the wind changed from N.W., through S.W., gradually to E. on the above dates, and was usually fairly strong. One bird was obtained, on the 16th, and it is to be presumed that all were of the same race.

SWALLOW (*Hirundo r. rustica*). Between 11.0 a.m. and 1.0 p.m. on September 17th (55° 32′ N., 8° 52′ W., at 12.0 p.m.) at least four were seen ; soon after we sighted Ireland they disappeared.

GANNET (*Sula bassana*). Not seen west of about 10° W. on the British side, or east of about 50° 54′ W. on the American side, except for an immature bird seen on August 5th, in 55° 16′ N., 16° 42′ W. None were seen outside the hundred-fathom line except this bird ; relatively few were in immature plumage.

LEACH'S PETREL (*Oceanodroma l. leucorrhoa*). We encountered a belt of small Petrels on August 8th and 9th, off Newfoundland, between about 43° and 52° W. On September 16th they were fairly common between 20° and 17° 10′ W. All those seen appeared to be Leach's Petrels.

MANX SHEARWATER (*Puffinus puffinus*). Seen only near land on the British side (August 5th).

GREAT SHEARWATER (*P. gravis*). Numerous between about 15° W. and 47° 30′ W. (August 5th-8th), and between 47° 30′ and 8° 50′ W. (September 13th-17th), except that none were seen on September 16th for some obscure reason. No sign of *P. kuhlii*.

SOOTY SHEARWATER (*P. griseus*). One in 54° 35′ N., 26° 13′ W., on August 6th, and another, just as Newfoundland was sighted, on the 9th. Several were seen at intervals on September 14th (52° 36′ N., 36° 55′ W., at noon).

FULMAR (*Fulmarus g. glacialis*). The commonest oceanic species, perhaps least numerous in the neighbourhood of 20° W., and probably more numerous in September than in August. I do not think that any one individual followed the ship for long. I thought I saw Fulmars close to the N. Irish coast on August 4th, but could not be sure.

OYSTER-CATCHER ? (*Hæmatopus ostralegus*). Two birds, probably of this species, in about 55° 17′ N., 16° 02′ W., on August 5th.

TURNSTONE ? (*Arenaria interpres*). A small wader, probably of this species, flew past the ship when about ten miles off the N. Irish coast, in long. 8° 07′ W., on September 17th.

PHALAROPE (*Phalaropus* sp.). One flew across our bows, when about two miles off St. John's, on August 9th.

ARCTIC TERN ? (*Sterna macrura*). Parties and single birds evidently referable to this species were seen on September 14th and 15th, between 38° and 25° W. The direction of their flight was not definitely ascertained.

KITTIWAKE (*Rissa t. tridactyla*). On the outward voyage several were seen off the N. Irish coast and others at intervals as far west as 19° 30′ W. No others were seen until near the Newfoundland coast. On the return voyage they were noted as follows: September 15th (*c.* 28° W.), September 16th (17° 36′ W.); no others were seen. All were in adult plumage.

GREAT SKUA (*Stercorarius s. skua*). Three were seen between 20° and 27° W. on August 5th and 6th; one in about long. 28° 30′ W. on September 15th, and another on September 17th in sight of N. Ireland.

POMATORHINE SKUA (*S. pomarinus*).

ARCTIC SKUA ? (*S. parasiticus*).

LONG-TAILED SKUA (*S. longicaudus*). On August 6th (54° 32′ N., 27° 20′ W., at noon) we passed through a belt of Skuas, in which probably all these species were represented, a few others were seen on the 7th, 8th and 9th. On the return journey Skuas were seen on September 14th (several) and September 15th (many), between long. 37° 30′ W. and 25° W. There was obviously a large migration taking place in the region of 27° W. Most of the birds seen were apparently immature, but I definitely identified several adult Pomatorhine and Long-tailed Skuas.

Other species, such as Puffins, Guillemots, Black Guillemots, Gulls, Terns and Cormorants, were seen fairly close to land, and details concerning them are to be found under August 4th and 9th, and September 12th and 17th.

Altogether twenty-seven, and probably more, species were seen on the two voyages.

NOTES

CONTINENTAL JAY AND SCANDINAVIAN LESSER BLACK-BACKED GULL IN ESSEX.

For the last few years I have examined a number of Jays killed in Essex, in the hope of finding the Continental form. On November 22nd, 1934, one, a female, was shot at Longwood, Layer Marney, Essex, which had the lower mantle and back greyer than usual. Mr. N. B. Kinnear and Mr. H. F. Witherby, who have compared this bird with a series of skins, have identified it as the Continental Jay (*Garrulus g. glandarius*). The " stomach " contained a quantity of acorn fragments and a particle of an unidentifiable " fruit stone ". The grit from the gizzard appears identical with that usually found in Jays from this part of Essex. Although the Continental Jay has been identified in Suffolk, this is the first record of its occurrence in Essex.

The Scandinavian Lesser Black-backed Gull (*Larus f. fuscus*) also does not seem to have been recorded previously in Essex. There is an adult female in my collection, killed in April, 1917, near Kelvedon, Essex, approximately nine miles from the coast, which I have always believed to be of this race. Mr. Kinnear, who has seen this bird, confirmed the identification. British Lesser Black-backed Gulls (*Larus f. graellsii*), occur annually in this district during April and May, passing inland in a northerly or north-easterly direction. A similar movement over Cambridgeshire is mentioned in *The Birds of Cambridgeshire* ; there is no reference to the occurrence of the Scandinavian Lesser Black-backed Gull in that county.

I wish to acknowledge my thanks to Mr. Kinnear and Mr. Witherby for kindly examining these birds.

James W. Campbell.

A GREENFINCH " HOMING " EXPERIMENT.

In the early part of 1934 I had the good fortune to catch a " homing " Greenfinch (*Chloris ch. chloris*) in my trap at Birmingham, which allowed me to carry out some interesting tests.

The Greenfinch, FL.423, was first trapped on January 26th as an adult male. It next visited the trap on the 31st, after which it came in every day. On February 7th I decided that it must be deported and on that day I took it one mile to the N.N.W., following this up by journeys of two, three and four miles in the same direction on the next three days. It took exactly two hours to do the return journey on the last occasion. On the fifth day it was taken two miles into the city to the N.E., and as I found it back in the trap when I returned two hours later, I promptly took it out five miles to the S.W. The first five journeys were all in urban areas; this sixth one was out into the country. The bird was back in two and a half hours! After this, stern measures had to be taken. Two days later the Greenfinch was deported seven miles to the south and returned in twenty-two hours. We gave him one day's rest and then took him ten and a quarter miles S.E., only to see him back in the trap forty-three hours later. For the next few days he returned to the trap as fast as we threw him out, so on February 22nd I again took him ten and a quarter miles, but this time to the W.S.W. Here he was cut off from the trap by the Clent Hills which rise to about a thousand feet at their highest point—some 600 feet above the point of the bird's release. The Greenfinch was not seen again until March 7th, thirteen days later. For the rest of March the bird was constantly in and out of the trap, but in April his visits were less frequent, and he was last seen on the 22nd, and two days later trapping ceased for the season.

There are a few more details which, I think, may be of interest. The trap is an ordinary "house trap" in a field about seventy yards from the house, which is on the S.W. side of Birmingham, with a belt of fields leading out into the country to the west. The food put in the trap is usually shredded suet, No. 1 Chick Food, and sometimes household scraps. On journey No. 2, two miles N.N.W., the bird was accompanied by another cock Greenfinch, FL.422; they returned together. On journeys Nos. 1-6, the bird was released in the morning, but for 7-9 at 6.30 in the evening, when it was dark. Further, after he had been released on February 22nd there followed several days of fog in the district which, I think, was partly responsible for the long time which elapsed between the release and the return.

Finally, I am glad to say that he visited the trap again on December 12th, to show that he was still alive, and though he has not appeared since, I am hoping to see him again in the spring. W. E. KENRICK.

CRESTED TITS IN WEST ROSS-SHIRE.

I AM informed by a reliable correspondent that in June, 1934, he saw a pair of Crested Tits (*Parus c. scoticus?*) in pine woods within a few miles of the coast in Wester Ross. The previous records of the occurrence of the species in Ross-shire are from localities near the Moray Firth. W. B. ALEXANDER.

[It has also been reported as breeding in western Inverness-shire —EDS.]

THE ECTOPARASITES OF THE HOUSE-MARTIN—AND AN APPEAL.

IN a note in the *Entomologists' Monthly Magazine* (Feb., 16th, 1934), I have given a census of the ectoparasites living in the nests of House-Martins (*Delichon u. urbica*). In view of the interest and of the possible effect of these parasites, which are all blood-sucking arthropoda, on the size of the broods, etc., of the House-Martin, I should like to take this opportunity of calling the matter to the attention of ornithologists.*

Three nests collected by Mr. P. A. D. Hollom from the sewage farm near Weybridge Station, Surrey, in the early days of September, 1933, had only fairly recently been vacated by the birds. A count made of all the living parasites in each nest gave the following numbers :—(1) ninety-nine ; (2) four hundred and fifty-two ; (3) one hundred and eighty-two. These figures include the representatives of three groups of insects, namely, fleas, bird-flies and martin bugs, and the well-known " fowl-mite ". Fleas and bird-flies are probably familiar enough to need no description ; the martin bug is rarer and resembles the much-disliked bed-bug which infests human habitations.

All of these parasites pass their whole lives in the nests of the House-Martin. They feed at very frequent intervals only on the blood of their host, which must suffer in consequence a considerable loss of blood. The birds must be continually worried by one or the other of the parasites, especially, in the case of the adults, when they are resting in the nest or sitting on their eggs, and in the case of the young birds when they hatch and up until the time when they can fly. It would be of extreme interest to learn to what extent their activities are harmful to the health and growth of the birds.

Besides these numerous parasites found living in the nests of the House-Martin there are at least three species of lice and four species of mites which are known to live entirely on the body of this host, feeding on skin debris, feathers, etc. The House-Martin is, therefore, an extremely interesting host from the point of view of the parasitologist.

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*Mr. A. W. Boyd has already called attention to the importance of the ectoparasites of birds in his article " A Fly Parasitic on the Swallow" which appeared in the previous number of this journal (p. 225). The material upon which this note is based was received in connexion with the B.O.T. Swallow Inquiry.

My reason for publishing this short note is to call attention to the need for further co-operation between ornithologists and parasitologists. It was gratifying to learn from Mr. A. W. Boyd, early in 1934, that part of the B.O.T. Swallow Inquiry was to be concerned with the ectoparasites of these birds, but I am sorry to have to report that the material sent to me was almost negligible. I should like to appeal to ornithologists for help with the study of the ectoparasites of birds and shall be very pleased to get into touch with anyone who would be willing to collect material and send it to me at the British Museum (Natural History). There are many lines of inquiry which can be pursued only with the kind help of ornithologists. GORDON B. THOMPSON.

LATE PASSAGE OF SWIFTS IN SUSSEX.

IN connexion with the notes by Mr. Bertram Lloyd and Mr. P. A. D. Hollom (*antea*, pp. 172-4 and 204-5), it may be of interest to record that on June 21st, 1934, I witnessed the passing of a very large number of Swifts (*Apus apus*) over the town and sea-front of Eastbourne. They were coming from the north-east and making their way south-westwards. I watched them almost uninterruptedly from about 4.30 p.m. until 6.30 p.m., and though a certain number of individuals doubled back from time to time, the majority kept a steady course, and could be seen, through glasses, disappearing over the Downs towards Beachy Head. They drifted in leisurely fashion, many at a great height, and all, during the time that I watched them, silent. It was impossible to form any accurate idea of their numbers, but there were certainly many hundreds of them. The wind was south-west, and it was a dull day with driven clouds and fine rain. The local birds were well established more than a month before, and were still in full force many days after the passage of the migrants, so that the latter represented evidently a completely independent migration. RODNEY H. HIGGINS.

MONTAGU'S HARRIER IN OXFORDSHIRE.

ON April 16th, 1933, one of the keepers of a large estate in the Chiltern Hills, in Oxfordshire, informed Mr. G. H. Stock and myself of "two large hawks" which had frequently been seen in a particular valley. That same afternoon we kept watch and eventually saw the birds. Visibility was poor, however, and their identity was not ascertained.

We visited the locality again on May 7th and obtained a better view of the birds. It was obvious that they were a pair of Harriers, but it was impossible to name them specifically. May 28th was the last day on which we had occasion to see them. After this date they disappeared entirely.

When wandering over the same estate on December 23rd, 1934, we were fortunate in finding a gibbet containing the decomposing remains of a Harrier. The bird was sent to Mr. Witherby and he identified it as a female Montagu's Harrier (*Circus pygargus*). Although, of course, we cannot say how long this bird had been dead, circumstantial evidence suggests that this was one of the pair we had seen a year and a half ago.

I might draw attention to the fact that the birds were seen during the normal breeding-period for this species. The country around is admirable for nesting purposes, there being a tract of uncultivated land about a square mile in extent in the near vicinity. The land is hilly, varying in altitude between 300 and 500 feet. The vegetation is composed of bracken and rose-bay willow-herb, with scrub oaks and beeches, spruces and, in the lower areas, silver birches and sycamores. The estate, however, is strictly preserved for pheasant-rearing. R. J. SPITTLE.

BEWICK'S SWANS IN ANGLESEY.

IT may be of interest to record that my wife and I saw eighteen Bewick's Swans (*Cygnus b. bewickii*) together on December 29th, 1934, on a piece of water near Malldraeth, S.W. Anglesey. Although fairly near a road they were not wild, and some were preening themselves. At least five of them were immature birds. The sunlight was shining on them from behind me and I had an excellent view with both field glasses and telescope for as long as I cared, and could easily see the colouring of the bills and so distinguish them from Whoopers, and I have seen Bewick's Swans before.

In Forrest's *Handbook to the Vertebrate Fauna of N. Wales* (1919) the only records for N. Wales are two from the Dee estuary. EDWIN COHEN.

PINTAIL IN MIDDLESEX.

ON December 16th, 1934, my husband and I saw a Pintail (*Anas a. acuta*) on the middle pond of the three Hampstead ponds at the south end of the Heath. The bird was a male in beautiful plumage and was swimming about in company with a large number of Mallard and Black-headed Gulls. When we left the bird was asleep with its head tucked into the scapulars. The same bird (presumably) was seen by other observers on the Vale of Health pond on December 22nd, and on the 29th was again seen by us on one of the Highgate ponds. WINIFRED BOYD WATT.

GREY PLOVERS IN WILTSHIRE.

ON November 4th, 1934, in company with N. T. Walford, M. F. B. Bell and W. J. Garnett, I watched two adult Grey Plovers (*Squatarola squatarola*) feeding on the mud at the upper end of Coate Water, Swindon, Wiltshire. When passing over soft patches of mud they frequently flapped their wings, no doubt to prevent themselves from sinking in, and the black axillaries were then very conspicuous. W. B. ALEXANDER.

WADERS IN THE BRISTOL DISTRICT, 1933-1934.

THE following observations are given in continuation of the previous notes (*antea*, Vol. XXVII., p. 167) :—

GLOUCESTERSHIRE.

Severn mud-flats between Avonmouth and Severn Beach.

GREY PLOVER (*Squatarola s. squatarola*).—One, apparently an adult, on November 19th, 1933, and another on November 25th, 1934.

TURNSTONE (*Arenaria i. interpres*).—The frequent presence of Turnstones on an area of grass and mud-flats without any rocks, and at times in such large flocks, is of particular interest. Very few detailed observations have been made here in the past, but it seems possible that some of these birds may be present throughout the year. In 1933 there were 100-150 present on November 5th, at least 70 on the 26th, and in 1934 about 50 on August 26th, over 100 on September 23rd, and 170, in two flocks of 50 and 110, the remainder being scattered, on October 14th. At least 50 were there on November 11th. Taking the two years together, Turnstones have been seen in January, February, May and August to December. The latest date is May 14th (1933) and the earliest August 26th (1934).

SANDERLING (*Crocethia alba*).—Three on September 16th, 1934, one of which was certainly immature, as were probably all three.

KNOT (*Calidris c. canutus*).—One, immature, on September 9th, 1934, three on the 16th and four or five on the 23rd. Three on October 14th, and about 100, consisting of adult and immature birds, on November 11th.

CURLEW-SANDPIPER (*Calidris testacea*).—Two on September 16th, 1934, and one on the 23rd, were feeding with Dunlin.

PURPLE SANDPIPER (*Calidris m. maritima*).—One on November 5th, 1933, four on the 19th, and two on the 26th. Three (or more) on November 11th, 1934. On each occasion they were feeding along the mud in company with Dunlin.

BAR-TAILED GODWIT (*Limosa l. lapponica*).—One on September 9th, 1934, nine on the 16th and seven on the 23rd. All were immature.

BLACK-TAILED GODWIT (*Limosa l. limosa*).—One on September 30th, 1934.

WHIMBREL (*Numenius ph. phæopus*).—One on the Avonmouth flats on September 16th, 1934. Two were inland near Stoke Gifford and about five miles from the Severn on August 19th, 1934, and one was seen on grassland, either alone or with Curlews, in the same place, on many dates between August 25th and September 25th, 1934.

SOMERSET.

RUFF (*Philomachus pugnax*).—One at Barrow Gurney Reservoirs on September 2nd, 1934, and two (possibly three) at Blagdon Reservoir on September 30th.

GREEN-SANDPIPER (*Tringa ochropus*).—One at Barrow Gurney Reservoirs, February 25th, 1934.

GREENSHANK (*Tringa nebularia*).—One at Barrow Gurney Reservoirs, September 23rd, 1934, and two there on October 7th. Three at Blagdon Reservoir on September 30th, 1934.

BLACK-TAILED GODWIT (*Limosa l. limosa*).—A party of twenty-three were at Blagdon Reservoir on September 30th, 1934, and they were seen a few days later by the Rev. F. L. Blathwayt. Twelve were still there on November 4th.

H. H. DAVIS.
H. TETLEY.

SCARCE BIRDS IN FORTH AREA.—Among some notes contributed by the Midlothian Ornithological Club on birds of this area during 1933 (*Scot. Nat.*, 1934, pp. 81-2), the following may be specially mentioned:—A Shore-Lark (*Eremophila a. flava*) at Harperrig Reservoir on December 11th, a Red-breasted Flycatcher (*Muscicapa parva*) at the Isle of May on September 8th, an Osprey (*Pandion haliætus*) over

Harperrig Reservoir on May 6th, and a Gadwall (*Anas strepera*) off Granton Point on July 27th.

SNOW-BUNTING INLAND IN ESSEX.—*Correction*—The date in the note under the above heading, on p. 212, was unfortunately printed as November 30th, 1934, whereas it should have been November 3rd, 1934.

WILLOW-WARBLER IN GLAMORGANSHIRE IN DECEMBER.—Mr. J. G. Williams informs us that he watched for over ten minutes a Willow-Warbler (*Phylloscopus trochilus*) on December 2nd, 1934, at Gabalfa, on the outskirts of Cardiff. The bird was very tame and Mr. Williams was able to see clearly the colouring of the legs and thus confirm the identity.

DIPPER BREEDING IN HOY, ORKNEY.—In an article on the breeding birds of this island (*Scot. Nat.*, 1934, pp. 129-136), Mr. William Serle, Jun., mentions the nesting of Dippers (presumably *C. c. gularis*), which have not previously been recorded as breeding in the Orkneys or Shetlands.

HOMING EXPERIMENTS WITH SWALLOWS.—It is related in *Der Vogelzug* (October, 1934, pp. 161-6) that on June 28th, 1934, Professor Stresemann, Frau E. Beyer Stresemann and Dr. W. Rüppell, travelling by train between Berlin and Flushing on their way to the International Congress at Oxford, released twenty-one Swallows (*Hirundo r. rustica*) and six House-Martins (*Delichon u. urbica*) which had been caught by Herr Hans Warnat on the preceding day at Pausin, 25 km. north-west of Berlin. They were all adults captured at the nest, care being taken not to remove any that had young to feed. The birds were liberated in batches, between 6.10 and 10.05 a.m., at the German stations of Rheine and Bentheim (two batches), and the Dutch stations of Arnheim, Nijmegen and s'Hertzogenbosch, the distances from the nesting place being 390, 410, 500, 510 and 550 kilometres, respectively. Herr Warnat maintained his observations and trapping at Pausin until he had to leave there on July 2nd, and within these few days he was able to record with certainty the return of eleven Swallows and one Martin. Some others were seen, visible marks having been used in addition to numbered Rossitten rings, but these were not caught for definite identification.

Of fifteen Swallows liberated in three batches at Rheine and Bentheim, 390 km. (242 miles) and 410 km. (255 miles), four had returned to Pausin by the next day, five others by the third day, and one other by the fourth day. From six Swallows liberated at Arnheim, 500 km. (311 miles), and three Martins liberated at Nijmegen, 510 km. (317 miles), one of each had returned by the third day. No recoveries from the batch of three Martins liberated at s'Hertzogenbosch, 550 km. (342 miles), were recorded within the period of observation. The best time was made by a Swallow which covered 410 kilometres in 25 hours 50 minutes; this represents an average speed of 15.9 kilometres (9.9 miles) per hour—or 22.0 kilometres (13.7 miles) per hour if the period of night be deducted. A male Swallow returning on the third day found that its mate had already taken a new partner, but ousted the latter in the conflict which followed.

GANNET IN NOTTINGHAMSHIRE.—Miss F. K. Staunton informs us that a Gannet (*Sula bassana*), in nearly mature plumage, was picked up dead at Stapleford in October, 1934.

RECORDED NESTING OF LEACH'S FORK-TAILED PETREL IN ORKNEY.—Mr. H. W. Robinson records (*Scot. Nat.*, 1934, p. 93), on the word of the lightkeeper, Mr. C. McCormick, the nesting of a pair of Petrels identified as Leach's (*Oceanodroma leucorrhoa*) on Sule Skerry, Orkney, in the summer of 1933. Mr. McCormick is recorded as having seen the birds several times in June, but under what conditions is not stated, and discovered one sitting upon its egg, and some weeks afterwards found the egg-shell, " proving that the chick got away ". In view of the very restricted breeding range of the species in the British Islands this is an important record, but we think it requires substantiation. The record is very lacking in precision and no evidence is given by which one can say that the birds were correctly identified.

LITTLE STINTS IN CARDIGANSHIRE.—Mr. W. Hastings Smith informs us that on November 29th, 1934, he watched at close quarters two Little Stints (*Calidris minuta*) near Aberystwyth.

RAZORBILL INLAND IN ESSEX.—Mr. E. T. Nicholson informs us that he saw a Razorbill (*Alca torda*) on Banbury Reservoir, Walthamstow, on November 11th, 1934.

PUFFIN IN BERKSHIRE.—Mr. George Brown informs us that a Puffin (*Fratercula a. grabæ*) was picked up on the downs at Combe on November 5th, 1934. It was in fair condition, but had probably been killed by a Crow.

LETTERS.

TERRITORY AND FOOD.

To the Editors of BRITISH BIRDS.

SIRS,—May I say something on this vexed subject? I speak of those territorial species whose young depend upon insects for food.

Three sets of facts seem connected :—

(1) That in a cold and wet breeding season we find infertile eggs, chicks dead in the shell, and dead chicks.

(2) That if the young are exposed to the atmosphere when the temperature falls to 50° F. they collapse quickly during the first two days after birth.

(3) That in a cold and wet season there is great scarcity of insect life, and the hatches are intermittent and local.

Basing on these facts I thought there might be a relation between territory and food ; but it was clear that if the parents kept to their territories when the young hatched, in a bad season they might not find enough food or the finding of it might take too long. Thus, instead of being a help, territory might be a hindrance. And so I concluded that territory *" roughly insures that the bird population of a given area is in proportion to the available means of subsistence ".

But this was an inference ; for I had no knowledge then of any physical control which might allow a bird the necessary freedom of movement at the appropriate time.

Concerning the second set of facts we have now some valuable information. Kendeigh and Baldwin, experimenting with the body temperature of nestling House-Wrens (*Troglodytes a. ædon*), find :—

(*a*) That there is a rise and drop of several degrees in the body temperature of the young bird when the adult is brooding and absent.

(*b*) That the temperature of the young varies consistently with that of the atmosphere during the first few days.

(*c*) That during the first two or three hours in the morning, after the adults begin their morning activities, the temperature of the young is at its lowest point.

(*d*) That if the young bird were dependent upon its own resources for heat it would be as truly a cold blooded animal as many an invertebrate.

(*e*) That a high rate of development can only take place when the temperature is at the optimum.

**Territory in Bird Life*, p. 192.

Concerning the quantity of food that a nestling needs, Kluijver, experimenting with Starlings (*Sturnus v. vulgaris*), finds :—

(*a*) That during the first few days after birth the quantity of food a young Starling takes is equal to half its weight, and afterwards to six-sevenths of its weight.

(*b*) That six young Starlings, eight days old, take ten ounces of insects in the day.

These experiments show :—

(1) That in bad weather the birds must find food quickly during the first three hours after dawn.

(2) That the quantity of food is possibly larger than anyone thought ; weight translated into number represents a large heap of insects.

So, again, if there is no provision in a bird's inherited organization to enable it to take advantage of food in surrounding territories, in a bad season—it is the bad season that counts in evolutionary progress—it may neither find enough nor find it quick enough.

During the last twelve years I have watched Waterhens (*Gallinula ch. chloropus*) for five, Tree-Pipits (*Anthus t. trivialis*) for four, and Coots (*Fulica a. atra*) for three. In each of these species there is a change of behaviour when incubation begins. This change is disclosed by a loss of sexual activity, a loss of platform activity, and a loss or lessening of intolerance. Of the physiology of this change we now know something ; for Riddle finds that when incubation begins, a secretion, which he calls prolactin, brings about involution of the gonads.

A bird, then, is not hampered by its territory ; at the appropriate time it is free to seek in an area controlled by several territories, and to share, in bad weather, the temporary surplus of food which local hatches provide.

This physical change helps to give territory value in relation to food.

Some may say : If that is the sort of relation that obtains between territory and food, there is no hope of knowing whether it be true or false. I don't think so. Did anyone think, a few years ago, that presently he would know the body temperature of a nestling and its variations ; or that a secretion brings about involution of the gonads ; or that six Starlings, eight days old, need ten ounces of insects a day ? The naturalist can follow the physiologist, or the physiologist can follow the naturalist, one can help the other. But the naturalist can only help so long as he watches the same individual as far as possible daily throughout the cycle, and watches at the critical time—during the first three hours after dawn; these two conditions he must observe.

HARTLEBURY. ELIOT HOWARD.

TERRITORY AND FOOD, WITH SPECIAL REFERENCE TO THE GREAT CRESTED GREBE.

To the Editors of BRITISH BIRDS.

SIRS,—In the absence of L. S. V. Venables in Tanganyika, I must reply alone to the criticisms of E. M. Nicholson and B. W. Tucker (*antea*, pp. 246-248). To take the former first:—Possibly we were a little too definite in saying (*antea*, p. 198) that "territory is not correlated with food supply" in the Great Crested Grebe on Frensham Ponds. (It should be noted that we carefully applied this statement only to Frensham Ponds, which was all that we considered justifiable.) What we might have said was that there was no positive evidence whatever for thinking that territory is correlated with food, but much (quoted pp. 196-197) against this view. It might have been more correct not to have gone further than this, though I still find it impossible to conceive how the territories could have had food value when, out of eight pairs of Grebes *on the same pond and feeding over the same area*, seven pairs were colonial and one pair aggressively territorial. Mr. Nicholson's criticisms would have had more force if he could have brought forward some evidence showing or even suggesting that the territories had food value.

It is naturally gratifying to my father and myself to find that Mr. Nicholson, who was once the ardent champion of food territories, now admits that "in order to state the relation of something to food supply we must first know what food supply is". That was exactly our view, as expressed in "Territory Reviewed" (*antea*, XXVII., p. 192). Mr. Nicholson argues from this that we cannot say with certainty that territory is not correlated with food in the Great Crested Grebe. This statement applies to all territorial species, and implies equally that we cannot say that territory *is* correlated with food. Mr. Nicholson continues: "until it" (i.e. adequate food data) "has been collected, rival theories must remain simply rival theories, and more should not be claimed for them". This statement is inaccurate; there are not two rival theories. There is only one theory, namely, that put forward by H. Eliot Howard, and supported by Mr. Nicholson, that territory is definitely of food value. The validity of this theory was criticized by my father and myself (*loc. cit.*) on the grounds that there was no positive evidence whatever to support it, and much that rendered it doubtful. I would emphasize that in our criticism we never stated that the food value could be disproved; merely that it was unproven, a view Mr. Nicholson now accepts. The burden of proof does not rest with the critics but with the supporters of a theory.

Since the publication of "Territory Reviewed" there have been brought forward no conclusive field data for any species to support the theory, and the bulk of the criticisms we directed against it have still not been met. Mr. Tucker says "we admittedly do not know if a correlation between food and territory does exist". The only claim brought forward to favour it, I quote again from Mr. Tucker, is "the view that the latter" (i.e. territory *sens. strict.*) "is ultimately correlated with food and ensures the most advantageous spacing of the pairs, still stands as the most plausible working hypothesis yet put forward to account for it". Plausible is the correct term for this hypothesis, for it rests on nothing more than an *a priori* assumption that such a food correlation is a great advantage, if not an "economic necessity", for territorial birds. (As to why it is not such an advantage or necessity to many similar but colonial birds, including seven pairs, but not the eighth, of Great Crested Grebes on Frensham Great Pond, has not been satisfactorily explained.) A scientific theory must rest on very much more than a plausible hypothesis. Mr. Tucker's statement that there must be some valid adaptive reason for nesting territories in one case and much larger territories in others is also plausible, but also needs field evidence to support it. Any explanation of this phenomenon will have to take into account that there are not only marked differences between closely allied species but also between the individuals of the same species, even in the same region, as shown by the Great Crested Grebes on Frensham Great Pond.

I should like to refer to one other point raised by Mr. Tucker, the possibility that, in some species, territories are compressible, but only up to a certain limit (see Huxley, *antea*, XXVII., p. 277). This is perhaps so, but more evidence is needed before this view can be accepted, especially for the territorial Passerines. It may be noted that Venables (*antea*, p. 58) found that this did not apply to territory in the Dartford Warbler (*Sylvia u. dartfordiensis*), in which species, when crowded, the territories overlapped. But this bird is possibly exceptional. Nor did it apply to the Great Crested Grebes on Frensham Pond, which, when crowded, became colonial with common feeding grounds. Nor, interestingly enough, does it apply to the birds of prey, in which Nicholson (*How Birds Live*) used to consider that food territories were an economic necessity, for, as Jourdain (*antea*, XXI.,p. 71) pointed out, many of these birds when abundant are colonial.

May I end by saying that this discussion could have been much shortened were more data on territory available, and by pointing out that this is one of the most fruitful fields of ornithology for investigation at the present day. The admirable papers by the Ryves (*antea*, pp. 2 and 154) illustrate the interesting facts that still await discovery.

DAVID LACK.

WATER-BIRDS ON THE HIGHGATE PONDS.

To the Editors of BRITISH BIRDS.

SIRS,—As an addendum to the paper on this subject, published by us in the October number of *British Birds* (*antea*, pp. 122-9), the following figures may be of interest :—

A visit on December 17th, 1934, gave the following figures, in addition to a moderate number of gulls : Swans 7 ; Mallard 184 ; Tufted Duck 46 ; Pochard 1 (♀) ; Coots 2 ; Moorhens 89. The figure for Swans is the lowest recorded, the previous lowest being 9. The figure for Moorhens is larger by 6 than the previous maximum (in spite of an unusually low figure for H2, the second Highgate pond). The number of Tufted Ducks is close to the previous maximum ; their male sex-ratio was high (63.0 ♂♂ per 100 birds), as was previously the case when many birds were present. The Mallard sex-ratio was close to 1:1 (48.4 per cent. ♂♂). One pond (H4) was bare of all birds (except a couple of gulls)for the first time. The date was a fortnight in advance of the date of beginning of observation last year ; it was a still, fairly clear day after much mild and rainy weather.

It will, unfortunately, be impossible for either of us to go on taking the census in this or future seasons. If any observer is interested, it would be of value to continue the work and put it on a comparative basis.

J. S. HUXLEY AND A. T. BEST.

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CONTENTS OF NUMBER 10, VOL. XXVIII., MARCH 1, 1935.

PAGE
Notes on Colour Variation and Habits of Short-eared Owl. By T. Russell Goddard, F.L.S. 290
Birds of Inner London. By A. Holte Macpherson 292
On the Habits of Kingfishers. By Philip A. Clancey 295
The "British Birds Marking Scheme". Progress for 1934. By H. F. Witherby 302

Notes :—
Birds in Devon (K. D. Smith) 309
Number of Feathers in Nests of House-Sparrow and Wren (G. Marples) 309
Water-Pipits in Pembrokeshire (R. M. Lockley) 310
Fire-crested Wren in Norfolk (R. M. Garnett) 310
Parasite on Robin and Great Tit (G. Marples)... 311
Bewick's Swans and Leach's Fork-tailed Petrel in Carmarthenshire (J. F. Thomas) 311
Red-breasted Goose in Pembrokeshire (H. T. H. Foley) ... 312
Fulmar Petrels Ejecting Oil when Undisturbed (Miss M. J. Levett) 312
Gannet in Middlesex (D. Seth-Smith)... 312
Shags Inland (H. F. Witherby) 313
Dunlin in Summer Plumage in January (The Duchess of Bedford) 313
Razorbill Inland in Essex (E. Mann) 313
Tameness of a Guillemot (Clive Tate) 314
Land-Rail in Winter in Hampshire (Rev. F. C. R. Jourdain) ... 314
Quail Breeding in Merionethshire (R. E. Knowles) 315

Short Notes :
Pied Flycatcher Breeding in Lanarkshire. Blackcap in February in Worcestershire. Hen-Harrier in Sussex. Tawny Owl, Buzzard and Northern Golden Plover in the Outer Hebrides. Long-tailed Ducks in Sussex and Norfolk. Eiders in Norfolk. Status of Petrels in N. Rona, Sula Sgeir and Flannan Islands. Ruff in Winter in Cambridgeshire. Food of Black Grouse 315

Review :—
Birds in Britain To-day. By G. C. S. Ingram and H. M. Salmon 316

Local Reports :—
The London Naturalist, 1933 317
Report of the Oxford Ornithological Society, 1933 318
Report on the Birds of Wiltshire for 1933 318
Report of the Sanctuary Club, 1932, 1933, 1934 319

Letters :—
The Gannet Colony of Grímsey, North Iceland (P. F. Holmes and D. B. Keith) 319
The Skins and Eggs of the Great Auk (G. N. Carter) 320

NOTES ON COLOUR VARIATION AND HABITS OF SHORT-EARED OWL.*

BY

T. RUSSELL GODDARD, F.L.S.

(Plate 3).

DURING April and May, 1934, I was engaged in studying Short-eared Owls (*Asio f. flammeus*) on a forest at Newcastleton, in Roxburghshire, in the course of an enquiry in which the British Trust for Ornithology is co-operating with the Oxford University Bureau of Animal Population. The main object of the enquiry is to make Owl censuses and correlate these with changes in vole populations. The results will be published in the *Journal of Animal Ecology*. The object of the present paper is to record certain subsidiary observations relating to the colour variation and the habits of the Owls. The enclosed portion of the forest upon which I was working is 2,271 acres in extent, and its elevation above sea-level varies between 600 and 1,000 feet.

I had three breeding pairs of Short-eared Owls under observation throughout the period. The first discovery I made was that there were two distinct colour forms of the Short-eared Owl on the forest—a brown form and a grey form. Of the six birds under observation during April and May three were brown and three were grey. They were paired in the following manner—two browns, two greys and a grey male paired with a brown female. The grey form was literally a cold grey without any warm brown about it at all. The feathers on the breast and the tarsi, which in the brown form are a warm buff, were white in the grey form. The grey form of the Short-eared Owl was, in fact, quite as cold in colour as the extreme grey form of the Tawny Owl (*Strix aluco*).

The colour of the iris in the two grey birds which were paired together was the normal golden yellow, but the irides of the grey male which was paired with the brown female were either very dark brown or black; not having had the bird in my hand I cannot say which. However, I had this bird under observation for half an hour or more at a time, at a few yards range, on many occasions in brilliant sunlight, and his eyes appeared to be uniformly black. This pair had a clutch of seven eggs out of which four owlets were successfully reared. The eyes of the four owlets appeared to be normal in colour.

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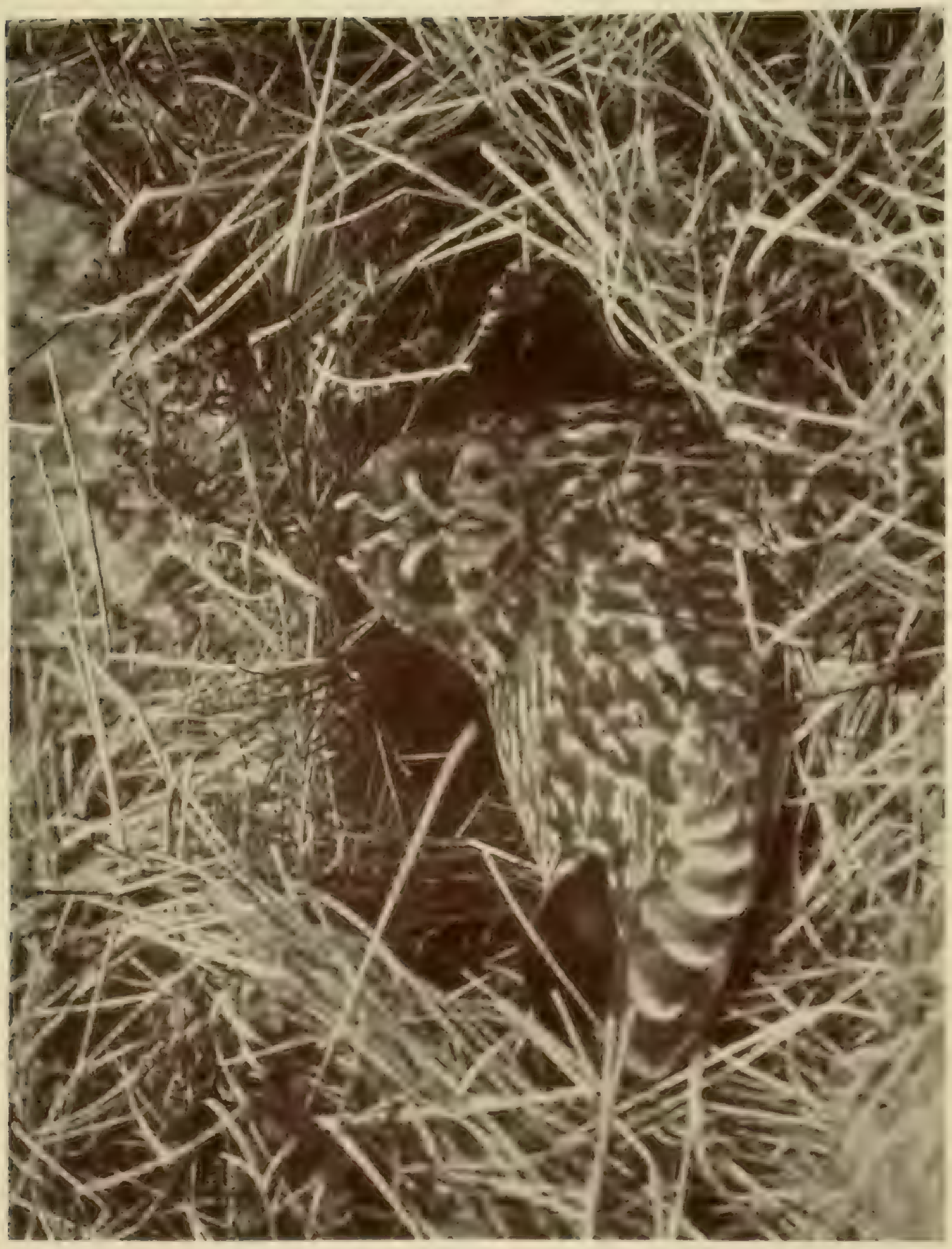
*Publication of the British Trust for Ornithology.



SHORT-EARED OWL AT THE NEST.

(*Photographed by* T. Russell Goddard.)

Short-eared Owls commenced nesting unusually early this year. A female was discovered sitting on seven eggs as early as March 23rd.

The pair of Owls in which the male and female were markedly different in their general coloration were under close observation on many occasions between April 16th and May 14th, and at various hours of the day. On no occasion was the male observed sitting on the eggs.

Owls were seen on the wing hunting up to about 10 a.m. and then they appeared to rest for about four hours. It was most unusual to see Owls on the wing between 10 a.m. and about 2 p.m. unless they were disturbed at the nest.

Short-eared Owls have a strongly-developed territorial instinct. On more than one occasion I have seen a Kestrel (*Falco t. tinnunculus*) which had flown over the territory of a pair of Owls mobbed and chased away by the male Owl. Two pairs of Owls were nesting fairly close together, the distance between the two nests being approximately 860 yards. If the male of one pair flew anywhere near the nest of the other it was immediately mobbed and driven off by the other male.

As everyone who has studied Short-eared Owls knows, the birds, when angry, fly round and clap their wings sharply beneath their bodies, making a loud crack. The number of claps given at a time varies from one to five. If as many as five claps are given at a time there is a short pause after the second—1, 2, pause, 3, 4, 5—the last three claps being made in rapid succession and without the wings being brought up to the horizontal between the strokes. In view of the late T. A. Coward's statement in *Birds of the British Isles and their Eggs* (third edition) that a Short-eared Owl, when clapping its wings beneath its body rises in the air, I should like to say that has not been my experience. I have watched this proceeding very closely on a number of occasions and have noticed that when more than one clap is given at a time the bird loses momentum and falls in the air. In no case have I seen a Short-eared Owl rise in the air when clapping its wings beneath its body in anger.

Although this species usually spends its resting hours upon the ground, the Owls were frequently seen perching on the leading shoots of six feet high spruces. The force of impact when the birds settled bent the leading shoots over into a more or less horizontal position, in which they remained so long as the birds were resting upon them.

BIRDS OF INNER LONDON.

BY

A. HOLTE MACPHERSON.

ADDITIONAL SPECIES.

THREE species, all of which occurred last year, must be added to the list published in this magazine in 1929 (Vol. XXII., pp. 222-244) and subsequently extended.

A Goldeneye (*Bucephala c. clangula*) which appeared on the Round Pond, Kensington Gardens, on October 19th, 1934, was still there at the end of the year and never left the place except for a short visit to the Serpentine. It is a young bird, but has not become tame like the Pochard and Tufted Ducks.

A Slavonian Grebe (*Podiceps auritus*), which arrived on the Round Pond on November 28th, 1934, has already been recorded (*antea*, p. 241). It remained three days.

The third addition is the Red-throated Diver (*Colymbus stellatus*), which in the spring of 1934 stayed for just over six weeks near the bridge dividing the Long Water from the Serpentine. I first saw it on March 15th, but no doubt it was there on the previous day when a telephone message from Mrs. E. MacAlister informed me that she had just seen a strange bird near the bridge. Though able to swim and dive, the bird appeared to be slightly contaminated with oil in the region of the under tail-coverts. It also had a slight injury to its right leg or foot, causing it to throw up the water on that side when swimming fast. For several weeks nearly all its time was spent on the bank of the Long Water. Its conduct was remarkable, for from the first it was absolutely fearless of human beings. Its condition gradually improved, and by the middle of April it had become much more active. It was last seen in the evening of April 25th by Dr. G. Carmichael Low.

I think it was a young bird. During its stay the size of some of the spots on its upper parts appeared to increase with the acquisition of new feathers ; but up to the time it left, it showed no trace of red on the throat.

ADDITIONAL NOTES IN 1934.

The Jays (*Garrulus g. rufitergum*), which have for some years inhabited the grounds of Holland House, seem to be less numerous. On the other hand, I am informed by Miss M. Rew that since early in April a pair of these birds has frequented the neighbourhood of St. Dunstan's, Regent's Park.

I did not come across the Lesser Whitethroat (*Sylvia c. curruca*), a species which rarely fails to visit Kensington Gardens in spring; but it was heard in song in a garden in Hamilton Terrace, Holland Park, by Miss S. Cropper and Miss Enaid Jones on May 4th, and by Miss Cropper again on May 23rd.

A Golden-crested Wren (*Regulus r. anglorum ?*) was noticed by Mr. E. G. Pedler on September 24th in the Flower Walk, Kensington Gardens.

RED-THROATED DIVER IN KENSINGTON GARDENS. SPRING, 1934. The bird is on the spot to which for some weeks it invariably resorted when not fishing. The photograph was taken from a boat by Mr. E. G. Pedler.

Wheatears (*Œnanthe œ. œnanthe*) occurred on several occasions from April 14th to May 3rd in Hyde and Regent's Parks; and at the latter place, Miss M. Rew writes that they were followed on May 19th by six "large ones", doubtless Greenland Wheatears (*Œnanthe œ. leucorrhoa*). This careful observer adds that two of these large birds were seen by her on September 2nd in the same place.

Miss M. Rew also observed in Regent's Park the Whinchat (*Saxicola r. rubetra*) twice in May, and the Redstart (*Phœnicurus ph. phœnicurus*) on two occasions during April.

A Lesser Spotted Woodpecker (*Dryobates m. comminutus*) was seen by Miss Elizabeth R. Glover on September 12th in Kensington Gardens.

Fewer Dabchicks (*Podiceps r. ruficollis*) than usual visited the parks. Mr. W. H. Perrett informs me that one was taken to the Natural History Museum on November 21st. It had been found alive in the area of a block of flats in Fulham during a fog.

Mr. E. G. Pedler observed two Turtle-Doves (*Streptopelia t. turtur*) on September 10th in Kensington Gardens.

Eight Lapwings (*Vanellus vanellus*) flew over Primrose Hill on January 8th (Miss M. Rew).

Common Sandpipers (*Tringa hypoleucos*) were noticed on passage on various occasions: in Kensington Gardens in April and May, and again in July, August and September; and in Regent's Park in May and July.

Dr. G. Carmichael Low saw a Redshank (*Tringa t. totanus*) on October 8th in Hyde Park. It was flying up the Serpentine.

A Whimbrel (*Numenius ph. phœopus*), calling and at no great height, passed over my house on Campden Hill on the evening of May 22nd, and another flew over Kensington on September 28th.

The occurrence of a Jack Snipe (*Lymnocryptes minimus*) in Pall Mall on May 2nd has already been recorded in these pages (*antea*, p. 29).

A Woodcock (*Scolopax r. rusticola*) was caught alive in Covent Garden on November 2nd by Mr. W. Platts, and taken to the Zoological Gardens. Mr. D. Seth-Smith told me that it had sustained no apparent injury.

ADDITIONAL NOTE FOR 1933.

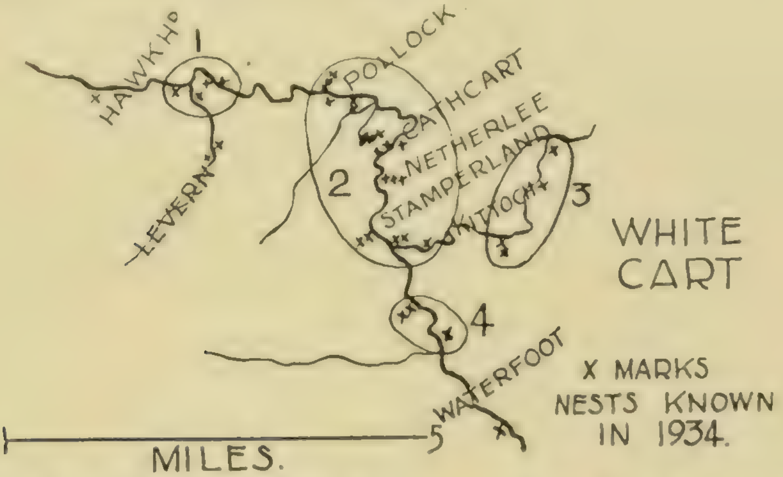
I have recently been informed by Mr. E. W. Hendy that on October 14th, 1933, he saw a Scandinavian Lesser Black-backed Gull (*Larus f. fuscus*) on the Serpentine.

ON THE HABITS OF KINGFISHERS.

BY

PHILIP A. CLANCEY.

THE following records and data concerning the Kingfisher (*Alcedo a. ispida*) were collected on the White Cart (Renfrewshire) during 1934, except where otherwise indicated. When a number is enclosed in brackets it shows whether a first, second or third brood is in question.



Groups Enclosed in Areas.—No. 1—4 nests; No. 2—18 nests; No. 3—4 nests; No. 4—3 nests. Isolated nests—4.
Total for 1934—33 nests.

INCUBATION PERIOD. Normal Time 19-21 days.

Records :		Lower Kittoch	...	19	days.
	(2)	Mid ,,	...	20	..
	(1)	Netherlee ...	...	20-21	..
	(2)	Pollokshaws	...	19	,,
	(2)	Stamperland	...	20	..

Twenty-one days' incubation is rarely attained except in cases where the hen is frequently disturbed during the incubation of the eggs.

FLEDGING PERIOD. Normal Time 23-26 days.

Records :		Lower Kittoch	...	22	days	
	(2)	Mid ,,	...	26	,,	
	(1)	Netherlee ...	...	24	,,	
		Cathcart (1933)	...	37	,,	(abnormal).
	(2)	Pollokshaws	...	24	,,	
	(2)	Stamperland	...	26	..	

The young of the Lower Kittoch birds were fed exceptionally quickly, and the majority flew on their twenty-second day.

In the case of the Cathcart nest in 1933, two young flew on their twenty-sixth day, two more on their thirtieth day, while the remaining two flew on their thirty-seventh day. This was due to a long drawn-out system of feeding. The last two to fly were highly nervous and would twist their necks as if in pain when handled.

NUMBER OF EGGS. Normal Number 7. Rarely 6.

Records :	Lower Kittoch ...	7
(1 & 2)	Mid ,, ...	7, 6
(1, 2 & 3)	Netherlee	7, 7, 7
(1 & 2)	Pollokshaws ...	7, 7
(1 & 2)	Stamperland ...	7, 7
(2)	Mid Pollok (1933) ...	4
	Hawkhead (1932) ...	1
	Cathcart	7

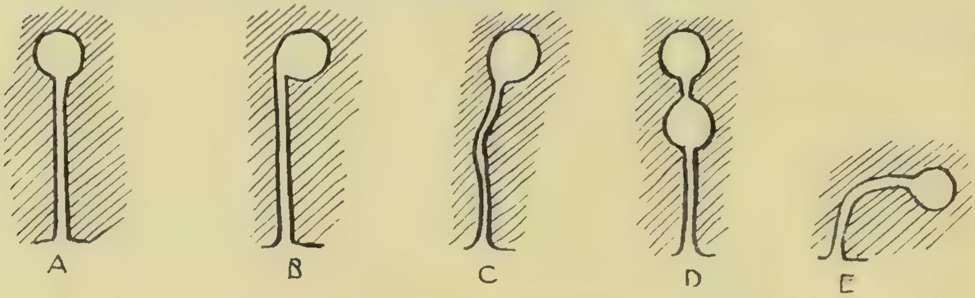
The one egg produced in 1932 at Hawkhead was the product of an old hen which died when captured in a bush opposite the nest hole.

Addled Eggs.—One, rarely two, when occurring.

LENGTH OF NEST HOLE. Normal Length—1 ft. 6 in. to 3 ft. Extremes, 9 in. and 4 ft. 6 in.

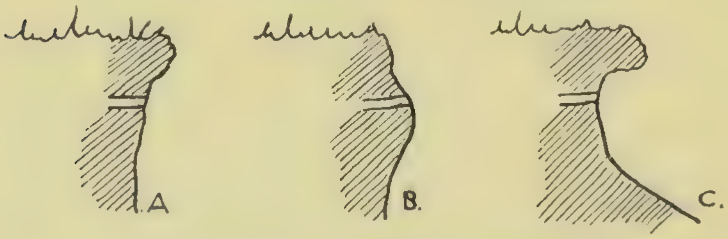
Records :	Falkirk (River Avon, 1933) ...	9 inches.
	Balmore (River Kelvin, 1933)	4 ft. 6 ins.
	Stamperland (1933)	4 ft. 6 ins.
(1, 3)	Netherlee	4 ft.
	Lower Kittoch	1 ft.
	Stamperland	1 ft.
	Cathcart	3 ft.

The Stamperland nest (1933) was in very hard, grey clay, while the Balmore nest in 1933 was in hard sand.



Types of nest holes as seen from above.

A.—Common type. B.—Frequent type. C.—Rare.
D.—Two records only. E.—One record.



Types of nest banks in section.
A.—Common type. B.—Two records only. C.—Frequent type.

TYPES OF NEST BANKS.

Nest banks, 3 feet and over above the water, are usually fairly dry, but this depends largely on the amount of vegetative growth on the top of the bank.

Dampness does not, however, seem to trouble the Kingfisher in the least. Perhaps healthier broods are hatched from moist banks than from dry ones.

In districts where nest banks are plentiful and extensive the same nest hole is hardly if ever used in consecutive years, but if the pair tenanting that particular bank are going to have a second brood the same hole is almost always used. On the other hand, in districts where nest banks are few and far between, the same nest hole may be used for many years. One at Waterfoot, to my knowledge, has been used for the last five years: 1930, 1931, 1932, 1933 (2 broods), 1934. The entrance to it is about the size of a rabbit burrow.

NEST MATERIAL.

The material used for the nest is fish bones, scales and the hard cases of crustaceans. In the case of early nesting Kingfishers the bones may be deposited three to six weeks before the eggs are laid (Cathcart, 1934, Lower Kittoch, 1934).

In cases where the birds are in a hurry to lay, the eggs are laid on the bare soil and the castings are put up as incubation proceeds.

HEIGHT OF NEST ABOVE WATER. Normal Height—3 ft. to 6 ft. Extremes, 2 ft. to 120 ft.

Records :	Hawkhead (1933)	1 ft. 10 ins.
	Lower Kittoch	2 ft. 3 ins.
	Pollokshaws	20 ft.
	Cathcart (1923-33)	120 ft.
	Mid Kittoch	4 ft.
	Stamperland	10 ft.

The nest bank at Cathcart was not used this year. The nest at Hawkhead (1933) was destroyed by a flood.

SHARE OF SEXES IN DIGGING NEST HOLE.

The digging of the nest hole is performed by both cock and hen, but in the majority of cases the cock is the main worker. Digging is performed at all hours of the day.

SHARE OF SEXES IN INCUBATION.

An equal share was noticed at Netherlee, Pollokshaws, Lower and Mid Kittoch, and Stamperland; also occasionally at very many other nests. The rare occurrence of both cock and hen brooding at one time was noticed at Stamperland, 1932-33.

SHARE OF SEXES IN REARING OF BROOD.

In practically all cases it is found that the cock helps the hen until the dispersal of the young.

Kingfisher about to enter nesting-hole.
(*Photographed by* Philip A. Clancey.)

NESTING SEASON. February-October.

The Netherlee Kingfishers were flushed from a nest bank on February 23rd, 1934, and a new hole seven inches long was found to have been started. On October 3rd, 1934, a hen was seen feeding newly flown young at Cathcart.

LAYING SEASON.

Approximately—March 27th to August 7th.

NUMBER OF BROODS. 1, occasionally 2. One record, 3.

Double broods were observed at Busby, Mid Kittoch, Stamperland, Netherlee (see *antea*, p. 83), Pollockshaws, High Levern.

CHICK MORTALITY.

On an average 1.75 per pair, when occurring. Certain birds occasionally let their whole brood die of exposure, through over anxiety to feed when they should be brooding. Possibly they are young, inexperienced birds of the preceeding year.

Records :	Lower Levern	May, 1934.
	Waterfoot	May, 1934.
	Pollokshaws	April, 1932-33.
	Mid Pollok	May, 1934.

AVERAGE NUMBER OF YOUNG REARED.

Four to seven, and occasionally only two or three are reared.

AVERAGE NUMBER OF YOUNG PER PAIR, 5.5.

	Place.	*No. of Young Reared.*	*No. of Young Dead.*	*No. of Eggs Destroyed or Unfertile.*
	High Kittoch	6	–	1
(2)	Mid ,, ...	6	–	–
	Lower ,, ...	7	–	–
(2)	Stamperland	5	1	1
(2)	Netherlee	4	2	1
(1)	Busby	7	–	–
(2)	,, ...	6	–	1
	Lower Levern	4	1	2
	Crookston Falls... ...	7	–	–
	Hawkhead	3	3	1

It is a common occurrence for the parent to bring a fertile egg out with her feet when coming out of the nest hole.

CALLS OF YOUNG AND GROWTH OF BILL.

Calls :

Approx. 3-9 days.—Low subdued squeaks. When heard in chorus this is often mistaken for the true purr.

Approx. 10-21 days.—A powerful purring note, often audible at quite a distance. Early broods do not purr as frequently as mid-summer broods.

Approx. 22- ? days.—A plaintive " peep " or " seep ".

Growth of Bill.

For the first fourteen days or so the upper mandible is shorter than the lower.

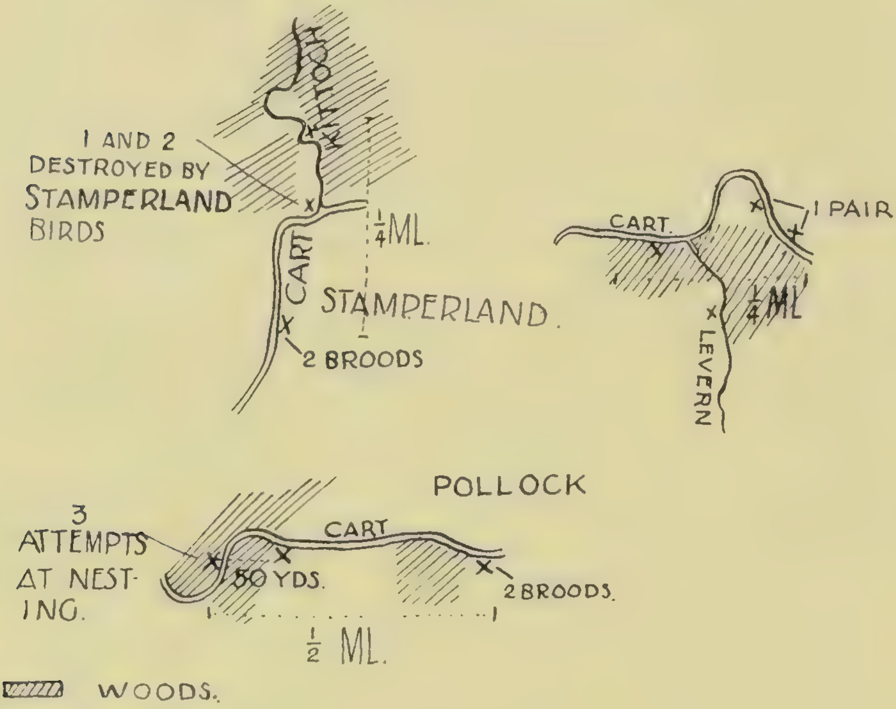
Call Notes of Mature Birds.

"Chi-kee", "seep", "peep". A harsh guttural note denotes anger (two records). "Trip" or "treep" heard occasionally in the breeding-season.

Courtship.

Chasing each other in and out of the trees and bushes bordering the stream, offerings of fish and crustacea by the cock, form the courting ceremony. Bill fencing suspected but not proved.

EXAMPLES OF OVERCROWDING.



Territory.

Strict, but there are exceptions.

In instances where the breeding pairs are reasonably apart little attention is paid to territorial rights as the greatest portion of the fishing for the young is done about one hundred to two hundred yards from the nest.

On the other hand, where the breeding pairs are closely packed, as illustrated in the "Overcrowding" map, fighting is frequent, but this is not always the case. Three occurrences of eggs being destroyed by rival pairs were noted at Kittoch-Cart junction, High Kittoch (Peel) and on the River Avon at Falkirk.

The first clutch of a pair at Kittoch-Cart junction was destroyed, when nearly hatching, by the Stamperland pair.

A fortnight later a second clutch was laid in the same hole. Both pairs hatched second clutches at the same time, but while the Stamperland pair reared their young succesfully, the other disappeared leaving their young to die. Whether they were chased away by the Stamperland pair or not, is uncertain.

The young, after leaving the nest, have practically all disappeared by the second or third day, and only very occasionally are the adults seen after the dispersal of the young unless a second brood is pending.

RELATIONS WITH OTHER SPECIES.

Rarely attacked or interfered with by any other species, excluding the Sparrow-Hawk (*Accipiter n. nisus*). Kingfishers have been seen to attack, for no apparent reason, the following species: Chaffinch, Wren, Dipper and Sandpiper.

HABITS.

The bobbing head motion and tail flirting are the two most characteristic habits. When nervous, both young and mature birds have the power of raising the crest feathers.

FLIGHT.

Swift and arrowy. On several occasions they have been seen to glide for short distances especially when about to settle in an elevated position. They frequently hover when fishing or about to enter the nest.

PERIOD OF DIGESTION.

Only one record (immature bird). Minnow, 2½ inches long, four hours.

FOOD.

Minnows, sticklebacks, loaches and crustacea.

THE "BRITISH BIRDS MARKING SCHEME."*

PROGRESS FOR 1934.

BY

H. F. WITHERBY.

NUMBER OF BIRDS RINGED.

	Trapped.	*Nestlings.*	*Total.*
In 1934	17,835	31,816	49,651
,, 1933	10,466	27,975	38,441
,, 1932	7,643	22,950	30,593
,, 1931	7,041	22,513	29,554

In 1909	2,171	In 1920	5,276
,, 1910	7,910	,, 1921	8,997
,, 1911	10,416	,, 1922	9,289
,, 1912	11,483	,, 1923	12,866
,, 1913	14,843	,, 1924	18,189
,, 1914	13,024	,, 1925	18,233
,, 1915	7,767	,, 1926	23,432
,, 1916	7,107	,, 1927	21,625
,, 1917	6,926	,, 1928	24,479
,, 1918	5,937	,, 1929	25,243
,, 1919	3,578	,, 1930	28,610

Grand Total 435,640

THERE is, as will be seen by the above figures, another large increase in 1934 in the annual total of birds ringed. The number of birds "trapped" has now risen to 36 per cent. of the total ringed. The number of Passeres ringed is nearly double that of all other orders.

The most notable point in the list of ringers is that no less than sixteen (five more than the year before) have reached a total of one thousand or more birds each, while of these six have ringed over two thousand each.

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*For previous Reports see Vol. III., pp. 179-182, for 1909; Vol IV., pp. 204-207, for 1910; Vol. V., pp. 158-162, for 1911; Vol. VI., pp. 177-183, for 1912; Vol. VII., pp. 190-195, for 1913; Vol. VIII., pp. 161-168, for 1914; Vol. IX., pp. 222-229, for 1915; Vol. X., pp. 150-156, for 1916; Vol. XI., pp. 271-276, for 1917; Vol. XIII., pp. 96-100, for 1918; Vol. XIII., pp. 237-240, for 1919; Vol. XIV., pp. 203-207, for 1920; Vol. XV., pp. 232-238, for 1921; Vol. XVI., pp. 277-281, for 1922; Vol. XVII., pp. 231-235, for 1923; Vol. XVIII., pp. 260-265, for 1924; Vol. XIX., pp. 275-280, for 1925; Vol. XX., pp. 236-241, for 1926; Vol. XXI., pp. 212-219, for 1927; Vol. XXII., pp. 253-258, for 1928; Vol. XXIII., pp. 258-263, for 1929; Vol. XXIV., pp. 234-244, for 1930; Vol. XXV., pp. 286-291, for 1931; Vol. XXVI., pp. 295-300, for 1932; Vol. XXVII., pp. 278-283, for 1933.

Mr. C. Wontner Smith, with 5,388, has ringed more birds in one season than any previous ringer under our scheme, though Dr. Moon has twice reached over five thousand three hundred. Mr. Wontner Smith arranged with Mr. Lockley to ring a large number of Gannets (1,841) on Grassholm, and this has already had interesting results as the recoveries show. Lord Dumfries also ringed 204 Gannets in Scotland. Mr. Smith's list includes Guillemots (251), Razorbills (138) and a number of Passeres, besides many Manx Shearwaters (1,618), which were ringed in the hope that some interesting recoveries might result from large numbers, but unfortunately this bird seldom comes to hand at sea, though some results should yet accrue from these and those ringed by Mr. Mitchell (454), the Oxford Ornithological Society (222) and Mr. Lockley (97).

Dr. Moon's list of nearly four thousand is again very large and includes some big individual totals, viz.: Lapwings (873), Song-Thrush (855), Blackbird (694), Starling (403), Pied Wagtail (122), and Curlew (116).

Mr. Morshead, whose total comes next, has trapped nearly three thousand, by far the largest number ringed in a season by this method. These included Greenfinches (1,095), Starlings (770), and Chaffinches (329).

The Oxford Ornithological Society have trapped more than half their total, and have ringed probably more species than anyone.

Mr. Robinson's list is chiefly made up of Sandwich (388) and Common (921) Terns and Lesser Black-backed Gulls (734).

Several schools have ringed good totals (Cheltenham, St. Edmund's, Rugby), but Bootham School, it will be noticed, has a remarkable total, this being made up of considerable numbers each of a varied list of species.

Mr. Mayall has again ringed large numbers of Nightingales (265) and Swallows (279).

Lord Scone's chief items are Mallard (178), Eider (185), Woodcock (123) and Land-Rail (57).

Mr. Boyd has trapped large numbers of Starlings and Greenfinches and has ringed 431 Swallows.

Mr. Charteris has specialized in trapping and especially in catching birds at roosts at night, a system which is likely to lead to interesting results as it is possible by this means to ring such birds as Redwings and Bramblings in numbers. I may mention here that Miss Monro ringed no less than 136 of the latter bird, caught by persistent trapping.

The London Natural History Society have made a good total of a varied list with a large proportion trapped. The chief totals are: Starling (526), Greenfinch (114) and Swallow (131).

Mr. Hollom's total is a noticeable increase and includes Herons (106) and trapped Tufted Ducks (25), as well as Black-headed Gulls (34), netted at night.

Mr. Cohen has ringed a good total of Swallows and the Messrs. Eggeling have largely devoted themselves to nestlings, while Mr. Garnett's list includes Swallow (166) and Sandwich Tern (360).

Mr. Lockley's list is noticeable on account of a number of birds taken in his large migration trap (referred to below), such as Meadow-Pipit (80), Wheatear (24), Alpine Pipit (2), White Wagtail (6), while Razorbills (246) are outstanding.

In other lists I notice Mr. Thomas has ringed 435 Swallows, Mr. Bartholomew 129 Kingfishers, Messrs. Bryson and Serle 101 Dippers, The British Trust for Ornithology 166 Woodcock, Mr. Harthan 246, and Mr. Mayo 200, Starlings, Mr. Kerr 205 Herring-Gulls, Mr. Cadman 80 Mallard and Mr. Carr 25 Bramblings and 26 Hawfinches. Altogether some one hundred and thirty lists have been sent in, and as many of them are from societies and schools the number of those actually taking part in the ringing must be considerable.

In the autumn of 1933 Mr. R. M. Lockley erected on Skokholm, his island off the Pembrokeshire coast, a large trap for migrants in the form of those used on Heligoland. Mr. Lockley has been very successful in catching and ringing migrants in this trap, which was the first of the kind erected in this country. His example has now been followed by the Midlothian Ornithological Club. The energetic young members of this club, with the help of Mr. Lockley and Mr. W. B. Alexander, have erected a large migration trap after the pattern of the Heligoland ones on the Isle of May, Firth of Forth, by permission of the Commissioners of Northern Lights. We know, from the interesting work that has been done for years by Miss L. J. Rintoul and Miss E. V. Baxter on this island, that it is an excellent place for passage migrants.

The Midlothian Club have been successful in raising funds not only for the trap but also for a bungalow, and intend to "man" this "station" during migration periods with relays of volunteer observers. A start was made and some interesting birds were caught and ringed immediately after the trap was completed.

We feel assured that both these stations are in very capable hands and we look forward to their accomplishing some very valuable work. It is to be hoped that now such a good beginning has been made in this direction other similar traps will be erected and worked at strategic points round our coasts. It is very necessary to choose the sites very carefully and previous observation must be made to ensure that the spot chosen is one in which migrants concentrate and that they can be caught there in such a trap. It is also necessary to have the traps of large size of the type of those used on Heligoland, already described in these pages by Mr. W. B. Alexander (*antea*, Vol. XXVII., pp. 284-289). Each place may require special modification of the trap and Mr. Alexander has offered further information to anyone who wishes to construct such a trap, while Mr. Lockley is also ready to give advice on the subject. Apart from its value in actual results this form of trapping has many exciting moments to those driving in the birds, especially when there are many migrants about or when rare visitors are suspected or have been seen. It is a great experience, too, to be able to handle and examine critically and note the distinctive characteristics of birds not easy to identify for certain in the field, and this provides moreover a much more satisfactory identification.

The recoveries reported during the year have been satisfactory, and a number of very interesting ones have come to hand.

For several years I have expressed gratitude to Miss E. P. Leach for the great assistance she has given in running the scheme. Each year the task grows greater and consequently more difficult and onerous, and it is no exaggeration to say that without Miss Leach's help it would be impossible to carry on the scheme under its present conditions.

NUMBER OF BIRDS "RINGED."

	Trapped.	*Nest-ling.*	*Total.*
C. Wontner Smith...	2,119	3,269	5,388
H. J. Moon ...	185	3,715	3,900
P. Morshead	2,919	314	3,233
Oxford Orn. Soc.	1,679	1,338	3,017
H. W. Robinson	71	2,204	2,275
Bootham School	569	1,674	2,243
A. Mayall ...	226	1,591	1,817
Lord Scone ...	100	1,590	1,690
A. W. Boyd ...	914	745	1,659
G. Charteris	1,116	288	1,404
London N.H. Soc.	956	380	1,336
P. Hollom ...	345	961	1,306
E. Cohen ...	333	873	1,206
W. J. & A. H. Eggeling ...	141	989	1,130
R. M. Garnett ...	129	922	1,051
R. M. Lockley ...	469	531	1,000
F. Mitchell ...	491	259	750
Lord Dumfries ...	138	456	594
N. F. Ticehurst...	27	552	579
Midlothian O. C.	99	474	573
J. F. Thomas ...	73	497	570
Cheltenham Coll.	289	261	550
J. Bartholomew	8	509	517
St. Edmund's S.	28	467	495
P. Allen... ...	72	404	476
E. Peake ...	451	—	451
Rugby School ...	48	401	449
D. K. Bryson and W. Serle ...	29	379	408
W. E. Kenrick ...	326	77	403
A. J. Harthan ...	335	46	381
P. Martinson ...	85	268	353
T. Kerr	7	322	329
Mrs. Hodgkin ...	3	322	325
W. A. Cadman ...	85	235	320
C. Oakes and E. Battersby ...	51	232	283
Miss Ferrier ...	26	217	243
Col. G. P. Pollitt	216	20	236
M. Philips Price	80	152	232
R. L. Bickersteth	203	22	225
J. Barnes ...	96	121	217
A. Mayo ...	217	—	217
F. J. Ramsay ...	190	26	216
S. Baron ...	137	72	209
M. Monro ...	203	2	205
C. S. Clarke ...	64	136	200
Perths. N.H. Soc.	—	187	187
Sanctuary Club, Cambs. ...	162	15	177
R. H. Brown ...	—	175	175
Brit. Trust for Orn.	—	168	168

	Trapped.	*Nest-ling.*	*Total*
M. Williams ...	82	78	160
J. Cunningham...	63	89	152
Mrs. Greenlees ...	3	143	146
G. Brown ...	16	129	145
H. Pease ...	143		143
F. A. Craine ...	26	104	130
G. Marples ...	69	53	122
Sutton Valence S.	76	41	117
J. F. Wynne ...	111	—	111
H. S. Greg ...	—	110	110
A. G. Haworth ...	89	20	109
Miss Sharp ...	6	103	109
J. Ellis	3	101	104
E. U. Savage ...	4	97	101
D. J. Robertson	2	96	98
H. V. Bamford...	2	90	92
Sir S. Bilsland ...	2	90	92
H. Whistler ...	86	4	90
Wigton Friends S.	5	84	89
P. Carr	81	—	81
R. Fitter ...	41	39	80
Mrs. Wilson ...	3	71	74
F. K. Staunton & N. T. Walford	57	16	73
E. M. Nicholson	40	32	72
Austwick F. C. ...	1	70	71
J. L. Guthrie ...	40	28	68
D. J. Waterhouse	46	20	66
H. Tully ...	10	52	62
T. Kirkwood ...	15	45	60
K. Newall ...	—	58	58
G. Wheeler and P. Hand ...	8	48	56
E. Wishart ...	—	52	52
W. Ritson ...	—	50	50
P. Deed... ...	7	41	48
P. Chance ...	1	45	46
T. J. Wallace ...	—	46	46
E. G. Holt ...	9	34	43
H. F. Witherby	6	35	41
R. Blezard ...	3	37	40
E. E. Knowles ...	—	34	34
A. E. Cohen ...	—	33	33
W. Duncan ...	—	32	32
Leighton Park S.	--	32	32
R. W. Gray ...	2	25	27
D. B. Mackenzie	—	27	27
T. Perrin ...	11	16	27
L. Monks ...	3	23	26
Lt.-Col. H. Blair Imrie... ...	—	24	24
R. G. Williams ...	19	4	23
J. A. Benington	20		20
M. Wainwright...	—	20	20

	NUMBERS OF EACH SPECIES "RINGED."					RECOVERED.	
	1909 to 1933	1934— Trapped.	Nestlings.	Total.	Grand Total.	of those ringed 1909-33.	Percentage.
Raven	94	—	2	2	96	7	7·4
*Crow, Carrion ...	638	1	87	88	726	45	7·0
Rook	2721	85	445	530	3251	94	3·4
Jackdaw ...	1769	106	130	236	2005	77	3·4
*Magpie	452	8	82	90	542	15	3·3
Jay	312	—	21	21	333	17	5·4
Starling... ...	28009	4422	1377	5799	33808	1201	4·2
Greenfinch ...	14358	2652	461	3113	17471	956	6.6
*Goldfinch ...	279	4	22	26	305	7	2.5
Redpoll, Lesser...	410	30	21	51	461	3	0.7
Linnet	6694	34	416	450	7144	48	0.7
Bullfinch ...	986	41	94	135	1121	14	1.4
Chaffinch ...	14221	1634	630	2264	16485	441	3.1
Brambling ...	88	181	—	181	269	1	1.1
Sparrow, Tree ...	1448	56	168	224	1672	43	2.9
Bunting, Yellow	3165	261	178	439	3604	178	5.6
Bunting, Reed ...	1263	33	52	85	1348	50	3.9
Lark, Sky ...	2951	103	37	140	3091	31	1.0
Pipit, Tree ...	1416	3	51	54	1470	4	0.2
Pipit, Meadow ...	3104	233	106	339	3443	40	1.2
Wagtail, Yellow	716	19	30	49	765	4	0.5
Wagtail, Grey ...	578	4	8	12	590	1	0.1
Wagtail, Pied ...	3947	94	208	302	4300	58	1.4
Tit, Great ...	2217	359	38	397	2614	302	13.6
Tit, Blue ...	2819	596	52	648	3467	529	18.7
Shrike, R.-backed	675	—	29	29	704	2	0.2
Flycatcher, S. ...	2937	20	43	63	3000	7	0.2
*Flycatcher, Pied	862	—	22	22	884	5	0.5
Chiffchaff ...	640	8	27	35	675	3	0.4
Warbler, Willow	8243	49	54	103	8346	35	0.4
Warbler, Wood...	901	2	11	13	914	2	0.2
Warbler, Reed ...	801	—	24	24	825	4	0.4
Warbler, Sedge...	902	8	44	52	954	1	0.1
Warbler, Garden	945	17	49	66	1011	1	0.1
Blackcap ...	632	7	43	50	682		
Whitethroat ...	3048	61	27	88	3136	13	0.4
Thrush, Mistle ...	2922	27	246	273	3195	50	1.7
Thrush, Song ...	44671	380	3885	4265	48936	713	1.5
Redwing ...	79	38		38	117	—	—
Ouzel, Ring ...	405	1	9	10	415	3	0.7
Blackbird ...	34086	802	3239	4041	38127	1267	3.7
Wheatear ...	1329	29	54	83	1412	24	1.8
Whinchat ...	1412	4	15	19	1431	8	0.5
Stonechat ...	627	—	13	13	640	4	0.6
Redstart ...	1487	21	74	95	1582	5	0.3
Nightingale ...	930	2	287	289	1219	4	0.4
Redbreast ...	14100	678	746	1424	15524	1110	7.8
Sparrow, Hedge	9290	667	545	1212	10502	649	6.9
Wren	3296	25	62	87	3383	10	0.3
Dipper	789	3	133	136	925	6	0.7
Swallow... ...	27726	154	3276	3430	31156	245	0.8
Martin	9330	34	361	395	9725	58	0.6
Martin, Sand ...	3970	66	3	69	4039	9	0.2

*Of species so marked no record was kept of the number ringed from 1913 to 1920.

	NUMBERS OF EACH SPECIES "RINGED."					RECOVERED.	
	1909 to 1933	1934 Trapped.	Nest-lings.	Total.	Grand Total.	of those ringed 1909-33.	Per-centage.
*Swift	701	15	18	33	734	46	6.5
Nightjar ...	165	—	4	4	169	2	1.2
Kingfisher ...	295	2	146	148	443	16	5.4
Wryneck ...	341	2	—	2	343	6	1.7
Cuckoo	477	4	36	40	517	17	3.5
*Owl, Little ...	356	7	14	21	377	35	9.8
Owl, Long-eared	174	—	13	13	187	7	4.0
Owl, Barn ...	364	20	34	54	418	25	6.8
Owl, Tawny ...	590	8	56	64	654	35	5.9
Peregrine Falcon	53	—	1	1	54	7	13.2
*Merlin	153	—	8	8	161	38	24.8
Kestrel	629	1	33	34	663	67	10.6
*Buzzard... ...	178	—	9	9	187	8	4.4
Hawk, Sparrow	342	3	26	29	371	50	14.6
Heron, Common	1305	—	280	280	1585	129	9.8
Sheld-Duck ...	280	2	45	47	327	13	4.6
Mallard	4914	30	293	323	5237	659	13.4
Teal	970	5	10	15	985	118	12.1
Wigeon	183	1	8	9	192	18	9.8
Duck, Tufted ...	80	37	3	40	120	9	11.2
Eider	474	—	188	188	662	16	3.3
Cormorant ...	1055	—	84	84	1139	190	18.0
Shag	1402	—	27	27	1429	139	9.9
Gannet	1638	142	2014	2156	3794	47	2.8
Shearwater, Manx	816	2377	16	2393	3209	46	5.6
Wood-Pigeon ...	2010	5	204	209	2219	83	4.1
Dove, Stock ...	367	11	39	50	417	16	4.3
Dove, Turtle ...	477	3	7	10	487	45	9.4
Stone-Curlew ...	129	—	22	22	151	5	3.8
Oyster-Catcher...	782	2	119	121	903	31	3.9
Plover, Ringed...	847	4	103	107	954	12	1.4
Plover, Golden...	185	3	16	19	204	3	1.6
Lapwing ...	23306	39	2188	2227	25533	523	2.2
Sandpiper, C. ...	641	—	47	47	688	2	0.3
Redshank ...	1421	—	165	165	1586	57	4.0
Curlew, Common	1751	2	215	217	1968	77	4.3
Snipe, Common	1066	8	77	85	1151	63	5.9
Woodcock ...	3053	—	450	450	3503	221	7.2
Tern, Sandwich	8930	—	1035	1035	9965	121	1.3
Tern, Common...	11649	—	1882	1882	13531	267	2.2
Tern, Arctic ...	907	—	177	177	1084	2	0.2
Tern, Little ...	408	—	94	94	502	3	0.7
Gull, B.-headed. .	12331	71	55	126	12457	539	4.3
Gull, Common ...	1160	15	93	108	1268	32	2.7
Gull, Herring ...	3150	5	1105	1110	4260	48	1.5
Gull, L. Blk.-bkd.	7815	1	848	849	8664	271	3.4
Gull, G. Blk.-bkd.	283	—	42	42	325	8	2.8
Kittiwake ...	753	—	181	181	934	8	1.0
Razorbill ...	1193	50	356	406	1599	22	1.8
*Guillemot ...	1182	13	299	312	1494	19	1.6
Puffin	2648	186	215	401	3049	14	0.5
Rail, Land ...	274	—	68	68	342	4	1.4
Moor-Hen ...	1170	40	51	91	1261	23	1.9
Coot	112	4	12	16	128	8	7.1

NOTES

BIRDS IN DEVON.

I SPENT the months August-November (inclusive), 1934, on holiday at Salcombe, south Devon. Most of my time was engaged in bird-observing, and the following notes may be of interest :—

CUCKOO (*Cuculus c. canorus*).—One was calling strongly on Bolt Head, early in the morning, on October 18th. This seems to be an exceptionally late date.

GREY PHALAROPE (*Phalaropus fulicarius*).—Very close view obtained of one up the Kingsbridge Estuary, October 26th.

RUFF (*Philomachus pugnax*).—Present at Slapton Ley in August. Two on the 15th, by their size and buff breasts, were presumably immature Reeves. A male, a much larger bird, was there on the 23rd, and another male on the 30th. The first had yellowish-brown, and the other greenish-brown, legs.

COMMON SANDPIPER (*Tringa hypoleucos*).—One seen up the Avon on November 10th and 26th is perhaps worth noting owing to the late date.

BLACK-TAILED GODWIT (*Limosa limosa*).—One, in winter plumage, up the Kingsbridge Estuary, October 14th and 22nd.

BLACK TERN (*Chlidonias niger*).—I obtained very close views of an immature bird at Slapton Ley on September 21st. The bird frequently submerged its head and half of its body, an action which is said to be unusual.

SCANDINAVIAN LESSER BLACK-BACKED GULL. (*Larus f. fuscus*).—Three tame birds on the mud flats in Salcombe harbour, October 18th. Identification was easy in every case due to the uniformly very dark mantle, best noticed in flight.

ICELAND GULL (*Larus leucopterus*).—On November 1st, when out with the fishermen off Bolt Head, I was lucky enough to see an adult fly over the boat. I had a good and close view of the bird as it flew over with Herring-Gulls, and noticed the pale grey mantle as it banked over. The wings appeared long and slender. K. D. SMITH.

NUMBER OF FEATHERS IN NESTS OF HOUSE-SPARROW AND WREN.

TWO House-Sparrows (*Passer d. domesticus*) built nests on my house in 1934. The lining of nest A, in addition to other material, contained 516 poultry feathers, while nest B had

1,199 poultry feathers. Now the nearest poultry run is 225 yards away. If it is assumed that one feather was carried at a time the lining of nest A involved journeys aggregating over 131 miles, and that of nest B no less than 306¾ miles. If it is preferred that several feathers, say an average of three, were carried on each journey, the distance covered is still formidable.

A nest of a Wren (*Troglodytes t. troglodytes*) in the garden contained 498 poultry feathers. On the same computation, this little bird must have covered 127 miles in obtaining the lining material alone. G. MARPLES.

WATER-PIPITS IN PEMBROKESHIRE.

AMONG the few hundred Pipits which have been caught since a Heligoland trap was put into operation on Skokholm in August, 1933, two Water-Pipits (*Anthus s. spinoletta*) have been trapped. The first was ringed on October 8th, 1933, the second on July 18th, 1934. Both appeared to be birds of the year. In the hand the warm brown of the upper-parts, the white outer webs of the outer tail-feathers, and the white belly were arresting characteristics which immediately singled out both birds apart from the Rock (*A. s. petrosus*) and Meadow (*A. pratensis*) Pipits which are daily caught in the trap. Measurements of wing, tail and claw were within the range of *spinoletta* as a species, and therefore could not help to prove subspecific distinction. Side by side with first-year Rock-Pipits they differed very noticeably in the deep brown of the crown, neck and mantle, which is, by comparison, very pale in the young Rock-Pipits. These upper-parts, and especially in the July bird, were marked with dark streaks where the dark centres of the feathers showed up.

The only records for Wales previously appear to be Carnarvon, April and December, 1897, and February, 1898.

R. M. LOCKLEY.

FIRE-CRESTED WREN IN NORFOLK.

ON January 22nd, 1935, my attention was drawn to a supposed Goldcrest by its unusually loud note, and on putting my glass on to it I found it was not a Goldcrest but a Firecrest (*Regulus ignicapillus*). Though not nearly so brightly coloured a bird as that which I saw in March, 1931 (*antea*, Vol. XXIV., p. 36), it distinctly showed the whitish superciliary stripe and the dark line through the eye. By its lemon-yellow crest, showing no trace of orange, I judged it to be a female.

It would be interesting to learn the opinion of others more familiar with the species than myself on the subject of the bird's note, for the *Practical Handbook* states that it can be distinguished at close quarters, but does not say in what respect it differs from that of the Goldcrest. RONALD M. GARNETT.

[Mr. Jourdain's statement in the *Practical Handbook* referred to the song of the male and not to the call note. Neither he nor I have noticed any difference in the call note of the Goldcrest and Firecrest.—H.F.W.]

PARASITE ON ROBIN AND GREAT TIT.

DURING 1934 I trapped over thirty Robins (*Erithacus r. melophilus*). Each of these birds, with one exception, had a small house-fly-like parasite harboured among its feathers; one bird had two of these. On no other species did I find the parasite except a Great Tit (*Parus m. newtoni*), on which was one specimen. To the naked eye it looks exactly like a small fly about one-eighth of an inch long, but under magnification it is seen to have bug-like appearances. It is curiously hard and difficult to crush which, at once, differentiates it from an ordinary fly. It seemed to be living, free, among the feathers, not attached to the flesh in any way. Mr. H. Britten, of the Manchester Museum, has kindly identified it as *Ornithomyia avicularia* H. GEORGE MARPLES.

BEWICK'S SWANS AND LEACH'S FORK-TAILED PETREL IN CARMARTHENSHIRE.

ON January 16th, 1935, I was able to identify two Bewick's Swans (*Cygnus b. bewickii*) in Carmarthenshire. In bulk, as compared with Mute Swans which were present at the same spot, the Bewick's Swans appeared less than two-thirds the size, and their necks were much more slender than those of the Mute Swans. The colouring of the bill was also clear, more than half of the distal end being black with the basal part yellow.

On January 2nd, 1935, a Leach's Fork-tailed Petrel (*Oceanodroma l. leucorrhoa*) was washed up on the high tide line at Pendine, Carmarthenshire, and was examined by me.

Bewick's Swan does not appear to have been recorded previously for the county, and there is only one previous record for Leach's Petrel. J. F. THOMAS.

RED-BREASTED GOOSE IN PEMBROKESHIRE.

ON the night of January 18th, 1935, I shot a goose in Milford Haven which was afterwards found to be an immature male

Red-breasted Goose (*Branta ruficollis*). In the moonlight I mistook the bird for a Brent Goose as it was swimming on the water. Subsequently, I found that it had been seen for about three weeks feeding on grass or stubble fields in the neighbourhood, and that the local gunners had tried to get it but it had proved to be too wary. The bird has been preserved by Rowland Ward, who informed me that the contents of the stomach consisted only of grass.

As the bird is so extremely rare in captivity, and as this was an immature bird and wild, without any trace of having been in captivity, I think it may be considered to have been a genuine migrant. H. T. H. FOLEY.

FULMAR PETRELS EJECTING OIL WHEN UNDISTURBED.

WHILE watching Fulmar Petrels (*Fulmarus g. glacialis*) on the Northumberland coast during the summer of 1934, the birds were twice seen to eject their oil for no apparent reason.

On the first occasion a Fulmar was brooding a chick on a ledge of rock and was in no way disturbed by other birds. The fluid was ejected in a spurt which carried it out over the ledge and fell clear of the rock. On the second occasion the bird had been flying round for some time and, having alighted on a ledge, it ejected a spurt of oil before it settled down.

The fluid was opaque and colourless.

This may be of interest to other observers, as it has been believed that these birds only eject their oil when disturbed by other birds or frightened by human intruders.

M. J. LEVETT.

GANNET IN MIDDLESEX.

AN adult Gannet (*Sula bassana*) was captured alive on the canal bank at Harlesden, London, N.W.10, on November 30th, 1934, by Mr. Kent, of Messrs. E. H. Burgess, Ltd., contractors, who, at the time, were erecting a building near the canal.

The bird, which did not appear to be injured, was sent to the Zoological Gardens, where it died on December 28th, of nephritis. The fact of the bird being in poor health probably accounted for its being so far away from its usual element.

D. SETH-SMITH.

[There is, we believe, no previous record of the Gannet in Middlesex.—EDS.]

SHAGS INLAND.

ESSEX.—Mr. E. T. Nicholson informs us that a Shag (*Phalacrocorax a. aristotelis*) was obtained at the Walthamstow reservoirs on February 3rd, 1935. Mr. B. Ward has kindly brought this bird for my inspection.

MIDDLESEX AND HERTFORDSHIRE.—Mr. D. Seth-Smith informs us that in the afternoon of February 6th, Mrs. Lake Barnett discovered a bird in her garden at Hornsey, and after capturing it with some difficulty, sent it on the following day to the Zoological Gardens, where it was examined and proved to be a Shag. On February 7th, Mr. E. S. Shoults, of Little Ditchfield Nurseries, Hoddesdon, Hertfordshire, telephoned to Mr. Seth-Smith informing him that there were three birds which he believed to be Shags, in his nursery garden. They were seen to come down there about 3 p.m. These were quite healthy but unable to fly up from the ground. The following day all three were captured and sent to the Zoological Gardens, where they proved to be Shags.

Mr. E. C. Rowberry writes us that on February 9th he was surprised to see nine Shags on the lake in Osterley Park. Eight of these were immature and were resting on a fallen tree on an island, while the ninth, an adult, was on the water.

SURREY.—On February 9th a Shag was found in a garden at Childown near Chertsey, and was brought to me by Mr. Sympson on the following day. This bird was very active and apparently in perfect health, and was a Shag in first winter plumage. Mr. Sympson then took it to the river at Chertsey and the bird almost immediately began to dive and was seen to bring to the surface and eat fish on several occasions.

The two birds examined by me and the four sent to the Zoo were all in first winter plumage. H. F. WITHERBY.

DUNLIN IN SUMMER PLUMAGE IN JANUARY.

WHEN looking for birds on the Salthouse Marshes, Norfolk, on January 24th, 1935, my companion and I watched a Dunlin (*Calidris alpina*), feeding amongst a number of others which appeared to be in perfect breeding plumage, with very dark breast and rich brown back. None of the other Dunlins showed a trace of the black breast and all were greyer on the back. M. BEDFORD.

RAZORBILL INLAND IN ESSEX.

IN connexion with the interesting account of the Razorbills (*Alca torda*) at Littleton Reservoir, which were found to be infested with flukes (*antea*, pp. 188 and 245), it is of interest to record that a Razorbill remained alive and well on one of the Walthamstow reservoirs for at least three months.

The presence of the bird was first made known to us by Mr. E. T. Nicholson (see *antea*, p. 284), who observed it on November 11th, 1934, and it was seen on November 17th by two of us, and again on a number of dates between that and February 9th, 1935, by one or more of us.

The bird appeared to be in very good condition, and we have seen it occasionally flying over the water. The fact that it remained so long on an inland water is unusual, and possibly flukes are absent or less numerous in this reservoir. During the same period there have been 40 to 60 Great Crested Grebes on the reservoir, which seems to point to there being plenty of fish which probably formed suitable food for the Razorbill.

E. MANN.
R. W. PETHEN.
W. A. WRIGHT.

TAMENESS OF A GUILLEMOT.

ON December 26th, 1934, I picked up on the shore at Alnmouth a Guillemot (*Uria aalge*) with the breast covered with oil.

During the eight days I had the bird it became remarkably tame and took fish from my hand. Several days when the sea was calm I took it to the shore. When liberated it usually walked a little way into the sea, dipped its beak in the water, and after giving one of its harsh cries, swam out to sea a distance of perhaps 100 yards. It then swam back to the shore, climbed out on to the sand, and when I approached it ran up to me quivering its wings and fondling my fingers with its bill. In those few days the bird became not only tame but companionable, and when one morning it was found dead in the house where it slept, I felt that a friend had gone.

CLIVE TATE.

LAND-RAIL IN WINTER IN HAMPSHIRE.

ON February 4th, 1935, I received a message that either a Quail or Land-Rail was haunting a garden outside Christchurch, and spent the next afternoon in watching it. It turned out to be a Land-Rail (*Crex crex*) which had been seen in a small patch of weed-grown kitchen garden about 15 yards square, for a week past. The bird was extraordinarily tame and allowed itself to be watched from a few yards' distance without showing any fear. It showed no sign of injury.

F. C. R. JOURDAIN.

QUAIL BREEDING IN MERIONETHSHIRE.

MR. O. G. Eveson, of Hillfield Hall, Solihull, writes that although he did not know where they were hatched, a bevy of Quail (*Coturnix c. coturnix*) inhabited the stubble on a farm on his estate near Lake Bala in 1933. He himself flushed the birds on October 7th, and the bevy then contained ten birds, all strong and fully grown.

My friend, Mr. W. F. Irvine, of Brynllyn, near Corwen, who bought the estate upon which these Quail were seen, early in the autumn of 1934, tells me that Quail were again seen on the property in September, 1934, so that it would appear that the birds have bred two years running on this estate. RICHARD E. KNOWLES.

PIED FLYCATCHER BREEDING IN LANARKSHIRE.—As the Pied Flycatcher (*Muscicapa h. hypoleuca*) has not previously been recorded as breeding in this county it is interesting to note that Mr. E. L. Dunlop states (*Scot. Nat.*, 1934, p. 142) that a pair bred in one of his nesting boxes near Biggar, in 1934.

BLACKCAP IN FEBRUARY IN WORCESTERSHIRE.—Mr. P. E. A. Morshead informs us that on February 11th, 1935, he trapped a hen Blackcap (*Sylvia atricapilla*) at Malvern.

HEN-HARRIER IN SUSSEX.—Mr. J. F. Thomas informs us that on November 25th, 1934, he observed a Hen-Harrier (*Circus cyaneus*) on the Downs north of Seaford, almost in the same place as he reported one in December, 1929. Mr. Thomas says that the bird was a brown one with a conspicuous white rump and might, therefore, have been either a young male or a female.

TAWNY OWL, BUZZARD AND NORTHERN GOLDEN PLOVER IN OUTER HEBRIDES.—Miss E. V. Baxter states (*Scot. Nat.*, 1934, p. 147) that in April, 1934, she saw a Tawny Owl (*Strix a. sylvatica*) in the woods at Stornoway. In May, 1932, she and Miss Rintoul heard one in the same woods, but so far away that they did not care to record it, more especially as the bird was previously unknown in the Outer Hebrides. Miss Baxter states that the Common Buzzard (*Buteo buteo*) is now not uncommon and breeds about Tarbert, Harris. She was also able to observe some individuals of large flocks of Golden Plover so closely as to identify them as belonging to the Northern form, *Charadrius a. altifrons*.

LONG-TAILED DUCKS IN SUSSEX AND NORFOLK.—Mr. Philip Rickman informs us that on January 8th and again on the 19th, 1935, he saw an immature Long-tailed Duck (*Clangula hyemalis*) off Thorney Island. The bird was in company with Goldeneye Ducks. Records of Long-tailed Duck for Sussex in recent years appear to have been very infrequent.

Miss J. M. Ferrier also informs us that she observed an immature Long-tailed Duck in the Burnham Overy harbour on January 29th, 1935. They are, of course, more frequent in Norfolk than on the South Coast.

EIDERS IN NORFOLK.—Miss J. M. Ferrier informs us that she had a good view of an adult male and four female Eiders (*Somateria mollissima*) on January 27th, 1935, in Brancaster harbour.

STATUS OF PETRELS IN N. RONA, SULA SGEIR AND FLANNAN ISLANDS.—Mr. Malcolm Stewart (*Scot. Nat.*, 1934, pp. 95-8) gives a short account of these remote islands and some details of the distribution and status of the Petrels breeding upon them. He, with Mr. T. H. Harrisson, estimated that there were some 120 pairs of Leach's Petrel (*Oceanodroma l. leucorrhoa*) on N. Rona in 1931 ; he thinks there is a strong probability of this species nesting on Sula Sgeir, from the behaviour of birds round him, but not positively identified, during a night spent there, and the lighthouse keeper, in 1932, estimated the number of pairs on the Flannans at some 40.

RUFF IN WINTER IN CAMBRIDGESHIRE.—Mrs. Brindley informs us that she saw a Ruff (*Philomachus pugnax*) on January 10th, 1935, on the Cambridge Sewage Farm.

FOOD OF BLACK GROUSE.—Mr. F. H. Haines informs us that the full crop of a Greyhen (*Lyrurus t. britannicus*), killed on the Cefncoch Moors, Montgomeryshire, on September 6th, 1934, contained only the flowers, buds and young fruit of *Leontodon autumnalis*. The crop of a Blackcock, also full, killed at the same time and place, held nothing but the seeds of *Juncus squarrosus* and a leaf and a half of buttercup.

REVIEWS.

Birds in Britain To-day. By Geoffrey C. S. Ingram and H. Morrey Salmon. (Ivor Nicholson). Illustrated. 12s. 6d. net.

THE authors of this book are to be congratulated on having produced a sound piece of work. All the breeding birds and usual visitors and migrants on the British list are mentioned in the systematic order adopted in the *Practical Handbook*, arranged in chapters. Brief notes of the habits of many are made and a short account of their status and distribution is given. A good deal of this is based on personal observation and for this reason the book should be studied by ornithologists. Perhaps the most valuable parts are those concerning such birds as the Raven and Chough, which the authors know well in Wales, the first-hand accounts of the status of the scarcer or more irregularly distributed birds in Wales, and the accounts of habits of certain birds, such as Petrels, Nightjar, some of the Hawks, which they have watched to good purpose, and diving of Ducks, Coot and other birds.

The photographs illustrating the book are numerous and excellent, and we especially admire those, such as the pictures of the Kite, Chough, Nightjar, Redshank, Ducks, Shearwaters at sea and others, which give a good idea of the birds and their natural haunts, and are much more interesting than the close-up portrait of the bird at the nest, which has been so much overdone. The flashlight photographs of the Storm-Petrel and Manx Shearwaters gathered outside their burrows in a natural way are also novel and interesting.

Although the book, as a whole, is so sound, this is not to say that we can agree with everything the authors write, and sometimes they appear to be arguing on too limited data. A good deal is said about the prolonged period of adolescence (in several cases put down at two to three years) of certain waders. It is well known, of course, that there are a good many non-breeding waders and that in several species the first summer plumage is distinct from the adult, but, except for the Stilt, we know of no British wader which can be distinguished in plumage from the adult after its moult, when just over a year old. Moreover, because some individuals of a species do not breed in their first year, this is no proof that all do not. Terns have been shown to breed sometimes in first summer plumage and some Hawks perpetually breed in juvenile plumage.

Another point we might mention is the authors' contention, on a very slight basis, that the Scandinavian Lesser Black-backed Gull is a winter visitor and not a passage migrant. We think the records show that it is both, and we do not agree that it is unlikely to be a passage-migrant by its winter distribution, as suggested. The bulk, of course, keep to the east, but certainly a fair number pass down the west coast of France and north-west Spain, where we have ourselves seen it in September.

At the end of the book we have a full list of birds amended and brought up-to-date from the *Practical Handbook*. In this we may note a slip in spelling—*Phylloscopus inornatus* appearing as *inoratus*, and it is a pity that the Continental Song-Thrush was called *planiceps* before it could be corrected, while the American Black-billed Cuckoo has been omitted.

We can conclude by thanking the authors for a very useful and attractive book from which " padding " is conspicuously absent.

LOCAL REPORTS.

The London Naturalist, 1933. (London Nat. Hist. Soc.). 5s.

As has been usual in recent years this annual contains much of value to ornithologists and is especially interesting to those who live near London. The report on birds of the area for 1933 contains a number of interesting items, and among these we note occurrences of the scarcer ducks such as Pintail, Scaup, Long-tailed and Common Scoter at various reservoirs. Perhaps the most notable event for the year, not already recorded in our pages, was the occurrence of a number of unusual waders at the Barn Elms Reservoirs, and especially the King George V. Reservoir, which was practically emptied during the autumn and winter. Amongst these visitors were Grey Plover, Ruff, Sanderling, Knot, Curlew-Sandpiper, Little Stint, Greenshank, Grey Phalarope, Bar-tailed Godwit and Whimbrel. A summary of the observations made on certain species (Corn-Bunting, Yellow Wagtail, Reed-Warbler, Whinchat, Stonechat and Red-legged Partridge), selected for special study of their range and status, is of considerable value.

Besides the report this number contains a very useful article on " Gulls in the London Area ", by E. C. Rowberry, in which he summarizes their history as London birds from the time they first came, in the great frosts of 1887-8, 1892-3 and 1894-5, and gives details of the status and approximate numbers of each species in recent years. Mr. Rowberry also has a little to say about their roosting and feeding habits, and these are aspects which would bear more observation.

A further article of special historical interest is that by Dr. N. F. Ticehurst on " The marks used by swan-owners of London and Middlesex ". Dr. Ticehurst considers that our Mute Swans are descended, at any rate in part, from an indigenous race in East Anglia and Lincolnshire, and he thinks it likely that the bird was also indigenous in the Thames Valley judging by the enormous numbers of the semi-domestic birds recorded by writers in the fifteenth century. The earliest record of Swan keeping in the Thames is dated 1230.

Report of the Oxford Ornithological Society on the Birds of Oxfordshire, Berkshire and Buckinghamshire, 1933.

This Report, edited by Mr. B. W. Tucker, assisted by Mr. W. B. Alexander, contains many valuable observations from these three counties. A pair of Blue-headed Wagtails, seen on Port Meadow from May 11th to 26th, is interesting. There is a curious record of a black looking Woodpecker, but evidently not *Dryocopus martius*, seen on Sunningdale Golf Course. This is quite properly enclosed within square brackets as indeterminate. A Berkshire heronry, hitherto overlooked, has existed for about ten years at Buckland. This appears to have originated from Hinton Waldrist when the trees there were felled. Grey Lag-Geese were definitely identified for the first time both in Oxfordshire and Berkshire. Several Brent Geese, all of the dark-breasted form *Branta b. bernicla*, were shot in Oxfordshire and one was seen at Reading Sewage Farm. Among waders seen at the latter well-known locality may be mentioned—Turnstone, Ruff, Sanderling, a Red-necked Phalarope (September 25th) and Black-tailed Godwits. A Little Gull was also seen here on September 25th. Port Meadow (Oxford) was visited on May 3rd by Black, Common, Little and Sandwich Terns.

Results of special investigations (Starling Roosts, Barn-Owls, Redshanks, Great Crested Grebes), and ringing records, are also contained in this Report, which maintains the high standard set in previous years.

Report on the Birds of Wiltshire for 1933.

Many of the observations in this Report are much too vague to have any value. There are also several surprising records, which cannot be accepted until evidence of their accuracy is forthcoming. For instance Mealy Redpolls are stated to have been seen in January, but no details whatever are given as to their identification. Great Grey Shrikes were reported in *July*. Bitterns are recorded as "undoubtedly breeding" on the Salisbury Avon, "birds being seen all the year for the last three years in one particular place". No dates or details of the observation are given. Spotted Crakes were also seen throughout the summer from time to time at Britford. All these interesting happenings in Wiltshire were well worth enquiring into minutely, and publication of such insufficiently documented records is really valueless.

Several new localities are given for the Dipper, which appears to be increasing as a breeding bird. The Peregrine Falcon again reared a brood on Salisbury Cathedral. A Brent Goose appeared on Clarendon Lake (December 17th). The Clarendon heronry is reported as deserted in 1933.

Report of the Sanctuary Club, 1932, 1933, 1934.

This Report concerns a small sanctuary at Cambridge. It comprises only two acres of land and two acres of water and owners of much larger reserves would be envious of the number of birds occupying it. The most interesting part of the Report is the account of the number of nests of Blackbirds, Thrushes and Moorhens. Although the observations made were not sufficiently prolonged and the number of pairs concerned could not be positively ascertained, fair evidence is given to show that 13 pairs of Blackbirds made 35 nests and laid over 100 eggs, yet reared only 24 young to the stage of flying. Song-Thrushes were equal in number and built 39 nests, but reared only 27 young. The birds appeared to keep to definite small nesting areas notwithstanding loss of eggs and broods. The Moorhens increased from two to nine pairs as a result of an extra abundance of water. Further and closer studies on these lines would be valuable, especially if the difficulty of identifying individual pairs could be overcome.

LETTERS.

THE GANNET COLONY OF GRIMSEY, NORTH ICELAND.

To the Editors of BRITISH BIRDS.

SIRS,—In view of the recent article by Brian Roberts on the Gannet colonies of Iceland (*antea*, pp. 100-105) it may be of interest to record the following observations on the colony at Grímsey, off north Iceland. Roberts recorded twenty-one pairs of Gannets breeding and twenty-eight non-breeding birds in 1933. Last summer (1934) we spent four weeks in June and July on the island, and descended to the colony with ropes on July 6th, and after a thorough search found only one occupied nest containing a young bird about five days old. Forty-three mature birds was the maximum number seen at the colony, and there were none in immature plumage; but the forty-one non-breeding birds were shy and left the cliff whenever we came into view, leaving only the single breeding pair. The reason for this large decrease in breeding numbers was an earthquake which occurred on June 2nd, with its centre near Dalvík, on the mainland, some 35 miles away. The shock was felt on Grímsey, and a considerable quantity of small boulders and loose material was dislodged from the cliffs, with the result that vast numbers of birds' eggs were destroyed. The Gannet colony in particular suffered, as we were told that before the shock "about twenty pairs" were nesting. Judging from the one nest occupied on

July 6th, the eggs must have been incubated for about two weeks by June 2nd, but no remains of eggs were visible in July. The ledge where the occupied nest was situated appeared to be undamaged, and about ten unharmed but unoccupied nests were visible here. At the side of this ledge, however, was another, where there was one dead Gannet and several more nests, all partly covered by loose earth and stones. Thus it appears that at least one of the sitting birds had been killed by falling stones, and several of the nests destroyed ; and that the remaining birds deserted after the shock, with the exception of the one pair. It will be interesting to hear what numbers are breeding on Grímsey in 1935, as the colony has already moved its position once, from the stack Hafsúlastapa, which collapsed several years ago, to its present position on the main cliff opposite.

SCOTT POLAR RESEARCH INSTITUTE, CAMBRIDGE. P. F. HOLMES.
January 15*th*, 1935. D. B. KEITH.

THE SKINS AND EGGS OF THE GREAT AUK.

To the Editors of BRITISH BIRDS.

SIRS,—The Rev. F. C. R. Jourdain, in his interesting notes on the sale of two skins and six eggs of the Great Auk at Stevens's on the 14th November, 1934, refers (*antea*, p. 234) to lot 157 as follows :—

> " It was also in Lord Garvagh's possession (No. 2) and is apparently the egg bought at T. H. Potts' sale on April 7th, 1854, for £20 ".

There is no doubt whatever as to this egg being the same. In Stevens's catalogue it is described as follows :—

> " Lord Garvagh's egg (No. 2), as above ; this egg (although repaired) is not the egg recorded as the one ' broken by the footman at Lord Garvagh's ' ".

This statement is quite correct, but nevertheless it is, in fact, the egg " broken by the footman at Lord Garvagh's ".

Lord Garvagh's third egg was the one *recorded* as broken by the footman, but was found unbroken, although slightly cracked, nearly 30 years after Lord Garvagh's death. I have an excellent water-colour of it by a former owner, Dr. N. Troughton, of Coventry.

Incidentally, lots 156 and 157 are stated in the catalogue as having belonged to Count Barrace. This, however, is an error.

With regard to Mr. Jourdain's remarks as to lot 154, I think a word must have slipped in the copy. Surely the egg was not broken by Yarrell ; he only put it together.

As to the number of eggs, I have records of 75, all of which, excepting two, were photographed by the late Mr. Edward Bidwell. I am engaged in bringing the list up to date.

8, WOLSELEY PLACE, G. N. CARTER.
WITHINGTON, MANCHESTER.

[Lot 154 was certainly not broken by Yarrell ; the sentence would have been better phrased : " Lot 154 was broken, but was put together by Yarrell ". It is to be hoped that Mr. Carter will publish his information and tell us where Egg No. 42 and others whose history is obscure, are to be found.—F.C.R.J.]

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CONTENTS OF NUMBER 11, VOL. XXVIII., APRIL 1, 1935.

PAGE

Notes on the Rook: with Special Reference to the Proportion of Young in Flocks and the Change Over from the Winter Roost to the Rookery. By J. P. Burkitt 322

Distribution and Number of the Dipper on the North and South Esks (Midlothian). By William Serle, Junior, and Derek Bryson 327

An Index of Heron Population. By E. M. Nicholson 332

Notes from Reservoirs and Sewage Farms:—

Brooklands Sewage Farm, Surrey, 1931-34 (P. A. D. Hollom) 342

Altrincham Sewage Farm, Cheshire (A. W. Boyd) 343

Staffordshire Reservoirs (A. W. Boyd) 345

Notes:—

Notes on the Tree-Sparrow, 1934 (A. W. Boyd) 347

Spotted Flycatchers using same Nest and Rearing Cuckoo (Rev. C. E. Martin) 349

Fire-crested Wren in Kent and the Bird's Call-note (H. G. Alexander) 349

Red-breasted Mergansers in Middlesex (W. E. Glegg) 350

Oyster-Catchers' Method of Removing Limpets (G. B. Gooch) 351

Little Stint and Spotted Redshank Wintering; and Green Sandpiper in Summer in Somerset (K. D. Smith) 351

Short Notes:—

Great Grey Shrike in Surrey. Ring-Ouzel in Westmorland in Winter. Swallows in Yorkshire in December. Great Skuas in Yorkshire 352

x

BRITISH MUSEUM

NOTES ON THE ROOK:

WITH SPECIAL REFERENCE TO THE PROPORTION OF YOUNG IN FLOCKS, AND THE CHANGE OVER FROM THE WINTER ROOST TO THE ROOKERY.

BY

J. P. BURKITT.

A recent book, *The Life of the Rook,* by G. K. Yeates, makes one realize how much remains to be known about this bird, and emboldens me to give a summary of notes I have taken. There is a small rookery at my house. It is not a winter roost. The number of nests reached 54 in 1931. This number has not varied since then by more than one and in 1934 was 54. In 1933 a new rookery, most probably an offshoot of mine, was begun half a mile away. I think it has had at most six nests.

I have made very many counts of the birds that seem to belong to me, that is to say not only the birds nesting, but those which during the year come to my trees, and especially that number which comes at evening before setting off for the regular winter roost five miles away. It is a fairly usual practice to do this on fine evenings. Counting is far from easy and one is glad of many checks. I am fortunate in dealing with a small rookery. Jackdaws are a great obstacle, and as long as any leaves are left, counting has generally to be done in flight, and of course the birds are only occasionally all together or all visible. My birds sometimes meet and mix with other flocks when they get away a little from here, but such strangers seem never to come to my trees unless very rarely in the summer when a greatly increased number is to be observed for a few minutes. The small, new rookery made another difficulty. However, I seem to have very ample corroboration for my various figures. The numbers at different times of year have been so closely alike from year to year that I will treat the four years as one. In late autumn and winter the number is two and a half times the number of nests, or 134. But a number corresponding to twice the number of nests (108) is far more often at the trees than the remainder. In fact, during all last winter, I noted that the number most regularly coming to each of two parts of the rookery was exactly double the usual number of nests in each part—70 to where 35 nests had been, 38 to where 19 nests had been. Even individual trees are consistently seen with just the right number. I had put down these figures long before I noted the coincidence.

Now, what I take to be mating flights (more clearly proved as such in spring), generally in sets of three, coupled with great noise and wrestling at the rookery, have seemed as prominent at times in autumn (mainly September) as at the pre-nesting period. In fact, sites of nests and everything seem to be almost settled before the winter. If that be so then the above figure of twice the nests (or 108) would represent the surviving parents plus whatever new maters replace the dead. The other lot of about 26 would represent the present non-breeders, and would consist partly of the current year's young, and partly of those next older birds, if any, which had not got into the 108. Hence the young birds of the year would have been reduced to, at the very most, 26. But from observation of young birds (i.e. with feathered bills), which I shall refer to later, the young birds seem at the very most more like 13 than 26. In other words, I would appear to have at the very most 13 young surviving in winter from 54 nests, or only 0.24 per nest.

The lot of 26 to which I have referred seemed generally with Jackdaws, judging by the observation that when the Jackdaws were absent these 26 Rooks were also missing. At the time the nests were completed a closely similar number of apparent non-breeders was seen to roost in a bunch apart from the nests. (I had not thought of examining bills at that season).

Now, as to the post-nesting number, meaning that of birds coming back to my trees to roost on occasions in late June and in July, they seemed to average from year to year about 260 or, say, twice the pre-nesting number. If we still deduct the non-breeders this gives us 126 young birds, or 2.3 per nest. Mr. Yeates, in his book, quotes cases of counting young well before they are fledged. The average result was 2.2 to 2.5 per nest.* If my June and July counts represent my birds and all my birds, then the young of Mr. Yeates's reckoning had mostly survived up to then. But in view of the great disappearance of young a month or so later I am forced to treat with great suspicion the assumption that the 260, and similar figures, were all my birds. An all-important record would have been the proportion of young bills among them, if conditions for observing them had been possible. Mr. Roebuck (*antea*, Vol. XXVII., pp. 23 and 172) says that on an average four young are reared from each nest, but that from various unanalysed causes the numbers at the end of August are the same as in the previous January. This ultimate result, he admits, is more easily measured than the various factors producing it. I hardly think his figure of four can be right. In this article I have to assume that none of my

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*See *British Birds*, Vol. XX., p. 121, and Vol. XXI., p. 107.

nests are bogus. We are warned by Mr. Roebuck (page 7) of possible deceptions. (There is no shooting of rookeries in this district.) As to their habits immediately after the nesting season, my observations would agree with Mr. Yeates. The birds then seem to roost in groups or even in two's and three's in any convenient place. Small parties can enter a roosting site as silently as Owls, or leave it equally silently if they are not happy.

It was not till after the 1934 nesting season that I ever thought of counting young birds by their bills. It is amazing, as has been noted by others, that when we examine flocks in August and onwards so very few young birds can be seen. Have any figures ever been given ?

In the second half of 1934 I looked at many flocks in Ireland besides my own, and some in Wales. I gained the impression that in August some young birds could be accounted for by being in very small parties or single, in out-of-the-way places, such as up mountains. However, where flocks were examined, I considered that 1 in 12 was a maximum average of young in mid-August. Later on I often could not see any in 50 or in 150. In late September I found them easier to spot. I found 6 among what seemed were 20-30 of my own Rooks. I saw among a big flock 8 young, all together, at a rabbit hole. I saw such figures as 2 among 40 birds in view, 3 in 300, 4 in 20. But I often could not spot any at all. The general impression made was that at most the average to be seen anywhere towards winter was 1 in 10, or even 1 in 20. That is the reason, coupled with actual counting on my trees, why I said above that I felt sure I have not more than 13 young in my lot. I never had conditions which enabled me to find as many as 13 definitely in my trees ; when the trees got bare I never got beyond about 6. Of course, 13 seems an impossibly small survival, being 0.24 per nest by the first winter. Mr. Yeates, in his book, thinks that hardly more than 1.0 young bird per nest reaches maturity, but he does not profess to have any data. He does not, I think, mention non-breeders at all ; he mentions late builders or what he calls " second occupation ".

One particular observation of mine has to be recorded. On September 26th, among a flock of about 150 Rooks and Jackdaws not far from my place, fully half the Rooks were young, in fact whole groups were all young. I then found that this flock was with a bigger one, all together totalling about 400 Rooks and Jackdaws. This observation was so unusual that I much regret not following it up at the time. I have no explanation of the strange disappearance of young birds (if we are certain by bills). Young birds seem, by the way, quite silent even if one of them be surrounded by others all cawing and " fan-tailing ".

I found at the end of August, 1934, that my Rooks were then flying to roost at a summer rookery, much bigger than mine, which is three miles away to the south-west, whereas the winter roost is five miles away due south. This rookery was evidently holding at night a lot of other non-residents. 500 to 1,000 Rooks and Jackdaws came and roosted there on September 30th. But on October 2nd some of them ended the dusk evolutions by going off towards the winter roost, and on October 3rd many of the incomers hardly delayed at all, but almost at once passed on to the big roost, and only a very small number remained. My next visit was October 24th, when I found none at that summer roost. By October 11th my own Rooks had, I think, begun to fly direct to the big roost ; and whenever seen they do this for the rest of the winter.

It is extremely interesting to observe the conflicting impulses at the time Rooks give up the winter roost for the nesting rookery. Mr. Yeates does not seem to have noticed this. My Rooks, from early autumn onwards, start for the roost at from five minutes before to five minutes after sunset (here 30 minutes later than Greenwich). In bad weather and bad light they probably go earlier. Now in the second half of February the birds visit the nesting rookery most mornings between 7.30 and 8 a.m. (Greenwich) as well as at an increasing number of times during the day. Towards dusk they wait on the trees for the right moment to depart. This moment I have found in February to recede from, perhaps, 30 minutes before sunset to sunset, and between 10th and 20th March to 22 minutes after sunset, but at such critical dates as between 21st and 24th March they have left at from 42 to 56 minutes after sunset. When, therefore, Mr. Yeates thought that seeing the birds at a rookery on March 16th " at 6 p.m. or even later " meant roosting there, and that they had left the winter roost, he might have been deceived, for 6 p.m. then would have been five minutes before his sunset. The birds also begin to arrive earlier in the mornings. On March 4th I have timed them at 25 minutes, and on March 9th at 47 minutes before sunrise.

The usual custom, in the evening in winter, is for the birds to go off all together to the roost, but at the critical dates in March, instead of doing this, a group flies off, then a series of groups, but some will now return after going a few hundred yards. Some of the latest to start will be drawn back several times, and I have noticed that these are those which have already begun to line their nests. Finally, on the fateful night, the last bird or two to remain after all the others have gone, hops down to lower branches near the nest: the plunge has been taken, and the habit of winter roost is broken. By another night or two a pair or two more will have stopped, and inside a week almost certainly all will have stopped. The bunch of non-breeders or late nesters are the last to stop. My dates for the first to stop vary between 13th and 25th March. But the pair which stopped on the 13th, the earliest date recorded, gave it up, apparently owing to raw, snowy weather, and none stopped again that year for 12 days. This was the only case I have known of leaving again after once stopping.

Mr. Yeates discusses the date of leaving the winter roost and its relation to egg laying. He concludes that the winter roost ends a week or so before the majority start laying, or, in other words, a couple of days before the earliest egg, which he puts at about March 16th. That is to say, some begin to roost at nests from, say, March 14th. My dates of the 13th to 25th thus agree fairly well with his. I never climbed to my nests, so that I cannot say when the first eggs were laid.

Since writing the above I have had new light on the young birds. In the end of December, 1934, and in January and early March, 1935, I saw, in a district far from rookeries, flocks of about 24 Rooks (with Jackdaws) in which all the Rooks were young birds. These, however, may have been all the same flock. The Rooks were quite silent whether feeding, perching, or flying, and hence such a flock could very easily be overlooked. In January, 1935, I saw many flocks over Ireland in which I failed to find any young birds. But in February I began to see young in some flocks and in the first half of March (to date) I met flocks in which the young were from one-third, increasing later to two-thirds of the total. These later flocks were small, the greatest count of young which I reached was 22 (there were Jackdaws with them). Some of the bills which now might have been taken for adults at a distance had remains of the young bristles. These March flocks were further from any rookery than breeding birds might be expected to be at this time. Hence it seems reasonable to surmise that they represented the young population plus the next older non-breeders. Such flocks from March to May should be of particular interest.

From my observations I may now suggest that through the winter young Rooks have a tendency at all times to group themselves whether with or without adult birds, and that after autumn they do not frequent rookeries in their daily routine.

DISTRIBUTION AND NUMBER OF THE DIPPER ON THE N. AND S. ESKS (MIDLOTHIAN).

BY

WILLIAM SERLE, JUNIOR, AND DEREK BRYSON.

THE North and South Esks together drain the greater part of Midlothian and a small part of Peeblesshire. The two rivers unite six miles from the sea. In their higher reaches the streams traverse wild, upland, heather-clad country—home of the Ring-Ouzel, Curlew, and Golden Plover. At lower levels the surroundings are wood, park, and arable land. At all altitudes one bird characterizes and predominates the stream—the Dipper (*Cinclus c. gularis*).

From November, 1933, till the end of January, 1934, we spent our time working out the winter distribution of the Dipper on the two Esks, and thereafter till the end of June, 1934, we were concerned with the distribution at the breeding season.

In the brief summary of our results some statements may appear terse and dogmatic, but we plead that they are based on a multitude of field observations which space does not permit us to detail.

WINTER DISTRIBUTION.

The weather remained mild and open throughout the months of November, December and January, so that the Dippers on the hill burns were not forced by frost to desert their haunts in favour of the lower reaches of the streams. We found the birds widely distributed, and arrived at the conclusion that the density of population of any stream depended mainly on the presence and availability of suitable food.

The Dipper's food consists of aquatic insects and their larvæ, fresh-water molluscs, and crustaceans; and the supply of these doubtless varies with the character of the stream—whether the stream bed is rocky, pebbly, sandy or muddy; whether or not the stream is contaminated by organic or inorganic matter in suspension or in solution.

A modifying factor is the availability of the food. To reach the bed of a stream—be it no more than one or two feet below the surface—and to remain there till its prey is sought and secured, entails for the Dipper the expenditure of great muscular energy in overcoming natural physical forces. Such energy expenditure is only justified when the feeding on the stream is good. Thus we have few records of the Dipper diving for food in the deep smooth reaches of well-populated streams, and only one record of a pair of Dippers diving in the depths of a reservoir thirty yards from the shore—at Edgelaw.

The territorial nature of the Dipper in winter (*q.v.*) no doubt has a bearing on the density of population in certain areas. We found no instance of active antagonism on the part of other species. For example, Kingfisher and Dipper on the same territory evinced no mutual hostility, and in one instance, at Toxsidehill, when we were working a tiny stream, a Kingfisher and a Dipper rose together from the same spot.

The total winter population of the North and South Esks and all their tributaries was 190 birds. The extent of occupied territory was approximately 65 miles so that the density of population is one Dipper to every third of a mile of stream. It will be appreciated that this figure can only be approximate, since in the course of three months some local movement amongst the Dippers is inevitable, and death reduces their numbers. On the other hand we checked our results by covering certain reaches twice, when we found that the counts were very nearly the same on each occasion.

Again, the territorial nature of the Dipper in winter is an important factor in maintaining the constancy of population of each stream. When a Dipper is followed upstream or downstream, a spot is reached—and this spot is constant—farther than which the Dipper will not go. The bird takes short, nervous flights from stone to stone, and appears to be in a quandary—whether to yield to the territorial instinct or to the fear instinct. The territorial instinct triumphs and the bird flies back past the observer, frequently making a detour from the course of the stream to avoid him.

The Dipper's winter territory is either shared with its mate, or occupied to the exclusion of all others of its own species. That two birds sharing a territory are male and female is evident from their behaviour—the singing of the male and so forth. Rather more than half the number of birds seen were paired. Single birds, male or female, are probably birds of the year, or birds that have lost their mate.

Exceptionally, three birds share a territory, and the impression conveyed is that these constitute a pair and a tolerated third party. Occasionally the strict territorial nature seems to be in abeyance ; territories overlap and a Dipper may keep company first with its neighbour upstream, and then with its neighbour downstream. We concluded that such behaviour was incidental to mating or to a recent change in distribution, secondary to some such factor as food supply.

The total extent of stream occupied is much greater in winter than in summer, due amongst other causes to the greater winter population, and to the presence of certain reaches of stream where the feeding is poor—barely adequate for a solitary bird, and quite inadequate for a breeding pair.

SUMMER DISTRIBUTION.

There were fifty-four pairs of Dippers breeding on the North and South Esks in 1934. We believe this estimation to be exact. In some instances we visited the breeding locality several times in an attempt to establish absolute proof of breeding, and in the case of forty-seven pairs we succeeded in finding the nest with eggs or young. Of the remaining seven pairs, three were seen followed by newly-flown young, three were never found with eggs or young, though we strongly suspect that they laid eggs which were destroyed or removed, and in the case of the last pair the female was found dead near the nest which was just ready for eggs.

For reasons already stated, not all the winter territory is occupied in summer, and further, in 1934, on some of the reaches of the streams which are normally tenanted at the breeding season—notably on the Glencorse and Fullarton Burns—there were no Dippers. This may have been due to the drought, and to the minimum amount of compensation water flowing from the reservoirs. Roughly, forty miles of stream were occupied in summer, giving on an average a territory three-quarters of a mile long.

In order to present these results more particularly we have sub-divided each Esk with its tributaries. We start with the N. Esk and work upstream.

*1. *Glencorse Burn.*

Winter population 21. Breeding population 7 pairs.

This clear, rapid, shallow stream, flowing over a pebbly bed, is ideal for Dippers. In summer, however, the water was low and birds were scarcer than usual.

2. *The N. Esk from Auchendinny to Penicuik, including its tributaries the Cuiken, Loan and Black Burns.*

Winter population 26. Breeding population 6 pairs.

Just below Peincuik the main stream is grossly polluted by waste from the paper mills and below this point the Dipper is only an occasional visitor to the main stream. Absence of Dippers on the higher reaches of the Black Burn was probably correlated with the high peaty acid concentration of the stream which would render it inimical to many forms of plant and animal life. An abundance of caddis worms on the Cuiken Burn may have induced the five Dippers observed to winter on this diminutive stream.

---

*This burn, like many others, bears different names in different parts of its course. The name may change after passing through a reservoir, at the junction with a side stream, etc. For simplicity's sake these changes in name have been ignored

3. *The N. Esk (with tributaries) from Penicuik to, and including, the Harlawmuir Burn.*

Winter population 39. Breeding population 8 pairs.

On one stretch of stream on this area, one and a half miles long, there were ten Dippers in winter. Food evidently was abundant, and was certainly accessible; the water pure, swift and shallow, the stream-bed pebbly, with many rocks breaking the surface to serve as diving perches for the hunting Dipper.

4. *The N. Esk from the Harlawmuir Burn to its source.*

Winter population 16. Breeding population 7 pairs.

The highest breeding pair nested at an elevation of 1,200 feet.

5. *The S. Esk from Dalhousie to its junction with the Redside Burn.*

Winter population 27. Breeding population 8 pairs.

Below Dalhousie there are no Dippers, as the water becomes contaminated by coal dust and sewage.

6. *The Gore Burn.*

Winter population 18. Breeding population 2 pairs.

This long stream, which rises on the slopes of the Moorfoot Hills, supports few Dippers. Possibly this is due to excessive hardness of the water for the streams flow through a limestone region. Lime works are situated on its course.

7. *The Redside Burn.*

Winter population 21. Breeding population 7 pairs.

There are long stretches of sluggish, deep, muddy-bottomed stream where the Dipper is never seen.

8. *The S. Esk from the Redside Burn junction to Gladhouse Reservoir.*

Winter population 11. Breeding population 4 pairs.

9. *The S. Esk from Gladhouse to its source.*

Winter population 11. Breeding population 4 pairs.

Fine dashing hill burns here—ideal Dipper terrain. The highest breeding pair nested at an elevation of 1,500 feet, and in winter birds were seen at the same height.

Whilst our primary object in studying the Dipper was to work out the distribution, we could not fail in the course of nine months to make other field observations, some of which, set down in rather haphazard fashion, may be of interest.

The song was heard from October to July, notably in the winter months. Exceptionally the bird sings on the wing. During courtship the bird sings fervently, posturing before the female—its body tense, neck extended, and wings quivering. Though, generally, the female is in attendance, we have heard unattached males singing in winter on solitary territories.

Generally the flying Dipper religiously follows every turn in the course of a stream. At times, however, it may take a short-cut across land (one we saw actually flew through a wood for a hundred yards), or a bird may deviate from its course to avoid an observer. In sustained flights a bird may rise to a height of 100 or 200 feet, and then proceed with a steady undulating flight.

As regards the nest, the typical site is the face of a rock or the masonwork of a bridge, and the typical feature of the immediate environment, a waterfall, rush, or swirl of water. But model homes are not always available. The nest may be situated well back from the water's edge, in which case the presence of a mass of droppings indicates the presence of young. One nest was built on the bole of a tree overhanging the stream, and nine feet above it. One nest was cleverly built into a hole in a sandbank, so that practically nothing of the nest was visible save the entrance. In other instances nests were carefully hidden in the masonwork of stone bridges. The usual lining for the inner cup is oak or beech leaves; in one instance the lining consisted of green willow leaves. In the hills the lining may consist of bracken, stems of rushes, or wisps of grass.

The first nest with eggs, c/3, was found on March 14th, and before the end of the month there were several others with eggs. The average date for fresh eggs, however, in this area, is the second week of April.

We amassed a fair amount of data regarding mortality amongst young Dippers. The normal clutch in this area is five eggs, and four is not uncommon. We found one, c/6. Smaller clutches we suspected to be incomplete, though as a rule we did not remove an egg to ascertain the stage of incubation, our principle being to handle a nest as little as possible to avoid attracting keen-scented vermin.

Of twenty-seven nests containing young old enough for ringing (i.e. at least one week old), six contained five young, eleven contained four young, nine contained three young, and one contained two young. The average brood of healthy half-fledged young was, therefore, 3.8, considerably lower than the average clutch. It was a patent fact, however, that the mortality incidence was highest—not at the embryonic and fledgling period, but immediately after the young had left the nest. Again and again we were struck by the scarcity of immature birds on streams where broods had been reared. There is no doubt that the crucial days in the life of the Dipper are those of the immediate post-fledgling period. By comparison, destruction of eggs and nestlings is negligible.

AN INDEX OF HERON POPULATION.*

BY

E. M. NICHOLSON.

WHEN the "*British Birds* Census of Heronries Report" was published in 1929 it was recommended that another complete census of British heronries should be taken not later than about 1940, if the full advantages of the 1928 Census were to be reaped. On the formation of the British Trust for Ornithology one of the first questions which came before the Scientific Advisory Committee was, therefore, the possibility of repeating this census. Knowledge which had become available largely since 1928, regarding animal populations, led, however, to the conclusion that the choice of a year for a full comparison with 1928 could not safely be made in the absence of information about the fluctuations, if any, of the Heron population. Supposing, for instance, that 1928 was a favourable year for breeding Herons in England and Wales, as there is some reason to believe. A fresh census taken in an unfavourable year might show an apparent tendency to decrease, while a couple of years earlier or later an increase on 1928 might be recorded.

The only reliable method of finding out whether fluctuations occur among the breeding stock of Herons, and if so to what extent, was by means of a yearly census. But a yearly national census would be very hard to organize, and would probably involve more work than it would justify. The conclusion reached, therefore, was that for a period of years an annual sample census should be taken.

Sampling is an attractive labour-saving device, but it presents a number of obstacles and pitfalls, and needs to be used with considerable caution. The size and composition of the sample must be such that it fairly represents the movement of population as a whole. Not only must its size be statistically adequate, but it must also consist of heronries distributed both by locality and by size in something like the same proportions as all British heronries. For instance, the first dozen heronries in England and Wales in order of size contained, in 1928, more than a thousand nests, or over 25 per cent. of the whole breeding stock, but simply to count these few exceptionally large heronries would give no accurate picture of changes in Heron population as a whole, because the smaller heronries might show quite a different trend.

Again, it would be easier to confine the sample to particular areas, but in order to be representative we must include heronries of all sizes in all parts of the country. Then it is necessary to construct the sample of such heronries as are likely to survive, and to be counted by reliable observers, over a period of years. A further necessity is to ensure that counts are taken as nearly as possible simultaneously, making allowance for some seasonal and local tolerance, but not comparing, say, a count taken in March one year with a count taken in June in another year. Finally, there is the difficulty of deciding whether the basis of the sample should consist of a number of known heronries, any or all of which may shift or become extinct with the passage of time, or with all the heronries on a given area, which may be difficult to find with certainty for some years after shifting has taken place.

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*Publication of the British Trust for Ornithology.

The method of dealing with this problem was to take a sample based partly on a selection of heronries and partly on an area within which all heronries, new or old, were to be counted. The sample area chosen was the Thames basin, covering all heronries on the Thames and its tributaries, down to and including the River Roding, immediately east of London. This area included about 6 per cent. of the heronries and about 8 per cent. of the Herons' nests recorded in the Report on the 1928 Census for England and Wales. In addition, a further fifty heronries were selected in all parts of the country, including nearly 20 per cent. of the heronries, and of the Heron population, recorded for 1928. In this manner a 25 per cent. sample was built up of heronries which are characteristic in size and distribution of heronries as a whole, and which, if present arrangements hold, can be counted annually for some years to come with a minimum of trouble, in order to keep us accurately informed of movements in Heron population. Actually, during 1934, the response by observers was so unexpectedly keen that a much larger sample was secured than had been originally intended, the survey covering more than a third of the known Heron breeding population. This large response has enabled a number of additional checks to be made, which will be valuable in showing how far the index is to be trusted.

The actual composition of the index is not given for fear that information about particular colonies might conceivably be abused. The 54 heronries included in the index which existed, and were counted both in 1928 and in 1934, showed an increase in total nests from 1,032 (1928) to 1,051 (1934). This is an increase of approximately 2 per cent., and taking 1928 as 100, the index figure for 1934 is, therefore, 102.

A further ten heronries to be included in the future sample either did not exist or were not reliably counted in both years. If these were included the total increase would be from about 1,079 to 1,133 nests, or approximately 5 per cent.—a figure which is not accepted because it covers more than one heronry undoubtedly missed in 1928, although in existence at that time.

The sample includes only one heronry which had 100 nests in 1928, and only three others which had 50 or more nests each. As there were altogether sixteen heronries of this size in 1928 the inclusion of four of them preserves the same proportion to the whole as the rest of the sample. For some reason the larger heronries seem to have been doing extraordinarily badly during the past six years. Of the seven larger heronries for which figures are available six show an aggregate decline of 182 nests, or some 35 per cent. It is true that the seventh shows an apparent increase of nearly 100 per cent., but here the figures are certainly not comparable, owing to the early date at which the 1928 count was taken. Even if this last were added the large heronries as a whole would still show a 20 per cent. decline, while the smaller heronries show a 28 per cent. increase. Too much importance must not be attached to these somewhat startling fluctuations. All heronries are liable to rise and fall unaccountably in numbers, and the fall of heronry A from 100 to 60, although more spectacular and more statistically important, is really no more violent than the fall of heronry B from sixteen to two, or the rise of heronry C from five to fifteen. On the whole, if an adequate sample is taken these individual fluctuations cancel out. It is true that we know of three falls by as much as forty nests or more, and of only two rises by as much as twenty nests or more, but the decline of forty nests at Wanstead is handsomely offset by the increase of forty-two nests at Walthamstow Reservoir about four miles away, and other advances of over 100 per cent. in six years show that the days of buoyant growth are by no means ended, and that alarming declines in one place are made good in another.

Two questions naturally arise to which it would be useful to have answers. First, does this slight apparent national increase of some 2 per cent. in six years indicate that the Heron breeding population is almost stationary, or does 1934 happen to have been a year in which the 1928 figure was approximately repeated after, perhaps, violent fluctuations either way? Further, does this slight national increase mean that the Heron breeding population is fully maintained in all parts, or does it mean that increase in some areas has been more than sufficient to offset decreases elsewhere ?

Unfortunately, present data do not permit any conclusive answer to these two questions, although after two or three years' work we may expect to obtain fairly accurate guidance on both points. If we analyse the 1934 sample in order to find out how large a part of it would have been needed in order to give a similar result (excluding throughout any heronries which did not exist or were not counted both in 1928 and in 1934) we find that although the actual index of 102 is based on a total of 1,051 nests, or more than 25 per cent. of all Herons' nests in England and Wales, an approximately similar index (102.5) would have resulted if the count had only covered the first 774 nests, on a list put down at random. If the sample were further restricted to the first 721 nests the index would, however, have come out substantially higher (104), and if only 541 nests had been covered the divergence would have been enormously greater, the index in that case being 116. Had the sample been further restricted to the first 321 nests the 1934 index would have come out at 100—a good deal nearer the mark. This test suggests that while an index based upon a series of heronries aggregating some three or four hundred nests *might* give a true indication of the national trend it would be liable to be seriously misleading. On the other hand, samples of 750 or more, provided that they truly reproduce the geographic and size distribution of heronries in England and Wales as a whole, seem to give for all practical purposes identical results, and there does not appear to be any point in attempting, for instance, to raise the size of the sample to 1,500 or 2,000 nests, the present group being apparently adequate.

It must be remembered that the sample of heronries is reinforced and checked by taking an entire region—the Thames basin—as a sample area, and that this sample area, taken by itself, gives an index for 1934 of 98, reckoned on the same basis as the national index of 102. Owing, however, to the presence in this area of three colonies for which no reliable 1928 count is available, it is not yet possible to obtain a satisfactory figure for comparison upon an area basis, which would have to include all new and extinct colonies as well as colonies in existence throughout the period under review. If the four new and extinct colonies in this area are included with all those for which we have reliable 1928 figures the Thames area index for 1934 still stands at 98.

Only time and experience can show precisely what degree of accuracy the index can claim. No one who is aware of the difficulty of counting certain heronries, the doubts which frequently arise as to whether a particular nest is occupied, the local and seasonal variations in breeding dates and habits, the idiosyncracies of observers, the mean figures which have to be arrived at where there is a conflict of evidence or where a maximum and a minimum are returned, to say nothing of the statistical error inherent in the sampling method, would make the mistake of building too much on any particular figure. On the other hand no one who knows the conditions of the census would suggest that the Heron could halve or double its breeding strength in this country without a sample of this type showing pretty well the speed and extent of the change. All that can be said with confidence is that the index certainly does not reliably mirror minute changes of, say, one or two per cent. and certainly does mirror substantial changes of the order of, say, forty or fifty per cent.

For the years between 1928 and 1934 we possess, unfortunately, in no case records of more than 556, and in some cases records of less than 250 nests, which are statistically inadequate as a sample and are moreover unsatisfactorily distributed as representing the country as a whole. Unless it should prove possible to collect further reliable figures which have been obtained but not notified, it is therefore impossible to state with accuracy what has been happening to our Heron population between 1928 and 1934. The following figures are given for what they are worth, which, except in the cases of 1928 and 1934, is, unfortunately, not very much :—

PROVISIONAL INDEX OF HERON BREEDING POPULATION.
(England and Wales : 1928=100).

Year.	*Index.*	*Number of Nests in sample.*
1928	100	1,032
1929	85	487
1930	92	566
1931	111	277
1932	100	223
1933	104	360
1934	102	1,051

N.B.—The sample for 1929-33 is not adequate and these figures should be treated with special caution.

As a partial check several different combinations of figures have been employed, and all agree that there was a sharp fall of Heron breeding population in 1929, followed by a rise to 1931, then a more or less marked recession followed by a fresh rise which has reached or passed its peak. The hard weather of the first months of 1929 undoubtedly caused much Heron mortality, as was shown by the record recoveries of ringed birds at that time; this setback may have accounted for part, at least, of the apparent diminution during 1929-30. After we have obtained a few years' figures based on a more adequate sample it will be possible to re-examine these provisional indices in the light of better information.

As regards regional fluctuations it is still more difficult to come to any conclusion, owing to the small numbers of nests usually involved, and the heavy individual fluctuations to which any particular heronry is exposed. The one part of England for which it is possible to speak with some confidence is the group of home and southern counties covered partly or wholly by the Thames drainage sample area which was completely surveyed. In this region, which includes Wiltshire, Berkshire, Oxfordshire, Buckinghamshire, Surrey, Middlesex, London and Essex, a substantial majority of all heronries were counted, and it can definitely be stated that the 1928 numbers are maintained. The next most satisfactory sample is for the three north-eastern counties—Yorkshire, Northumberland and Durham. Here, over an area amounting to nearly one-sixth of the whole country, but sparsely populated by Herons, a two-thirds sample of the 1928 heronries was checked. The result was to show an apparent regional decrease of some 16 per cent. over the six-year period, the 1934 index for this region working out at only 84, if 1928 is taken as 100. If the Gainford (Durham) heronry were not excluded, as it has actually become extinct, the decline would be even more marked. Of ten heronries counted in this region, both in 1928 and in 1934, no less than seven showed declines, while only two showed increases, the chief of which only partly compensates for a very heavy setback to this particular colony some years ago. Annual records which are available since 1928 for a series of Yorkshire heronries show a steady and disturbing decrease in numbers in most of the colonies.

In the north-western counties—Cumberland, Westmorland, Lancashire and Cheshire—the trend appears to be more encouraging, although as the sample available in this case is only some 30 per cent., it would be rash to draw sweeping conclusions. The seven heronries in this sample are larger than the average for the region, and five of them show an advance on 1928. There is, however, one serious setback, at Holker (Lancashire). It is possible that the 20 per cent. increase on 1928 recorded for this region is a fair indication of what has actually occurred.

In Wales and the Midlands samples of only between 20 and 30 per cent. are available. In the western parts of this region—that is, in Wales and the border counties of Monmouth, Hereford and Shropshire—the index shows an increase over 1928 of nearly 50 per cent. Although this increase is contributed by five of the seven heronries covered by the regional sample, only one showing a decrease, the result probably exaggerates an advance which may in fact be far less striking. Well over half the expansion comes from the revival of a single colony, which had sunk at the time of the 1928 census to the lowest level it is known to have touched, and appears now to be making a vigorous recovery. Excluding this heronry the expansion in Wales and the Welsh Marches would be of the order of 20 per cent., and pending further results a larger increase in this region should not be assumed. In the Midlands, from Worcester and Stafford east to the Wash and the Humber, another strong increase is shown, the 1934 index being 34 per cent. above 1928. This increase is shared by six of the eight heronries included, but Milton Park (Northamptonshire) is ruled out of the regional and national samples on account of its dominant size, and if it were admitted here the increase for the Midlands would be reduced to just over 10 per cent.

The sample for the eastern counties is the least satisfactory of all, as it includes only five heronries extant and recorded both in 1928 and 1934, and these between them only contain some 17 per cent. of the 1928 aggregate of nests for the region which they represent. The apparent decline of 13 per cent. probably signifies little ; in fact three of the five heronries showed substantial increases, and the poor showing of this region is entirely accounted for by the break-up of Nacton (Suffolk), which was already beginning in 1928, and has since involved a decline from about 50 to 17 nests.

More serious evidence of decline is found in the south-west. For Gloucester, Somerset, Dorset, Devon and Cornwall a 27 per cent. sample is available, again on the 1928 basis, and of the seven heronries checked in this region no fewer than five are below the 1928 level. The resulting index of 64 (36 per cent. below 1928) is the lowest for any part of England and Wales, and although more than half the drop is accounted for by Somerton (Somerset), the largest heronry admitted to the national sample, it is difficult to escape the conclusion that some decline has occurred during the past six years in the south-west. Already during 1929 Tucker recorded a sharp decline in four of the six leading Somerset heronries, and in 1930 estimated that the Somerset breeding Heron population, which had been reported as 273-280 pairs in the 1928 census, had fallen to about 215 in 1929, with a slight rise to about 220 in 1930. Reason was shown, however, for believing that the breeding stock had been abnormally high in Somerset in 1928, and as Somerset colonies account for some 80 per cent. of the total in the south-western regional sample the undoubted decrease may not be shared, at any rate to the same extent, by other counties in the region. The only region remaining to be dealt with is the south-eastern, including Kent, Sussex and Hampshire. The sample here is low—about 20 per cent., if Aldershaw is excluded on account of its great size. The resulting 1934 index is 106 per cent. of 1928. This region has fewer heronries than any other, and their average size is greater, so that sampling is not to be relied on. There is no reason to suppose that the trend here has been markedly different from the national trend, which shows on balance a slight increase over the 1928 level.

Summing up regional fluctuations, it appears that a real decrease of Heron breeding population has occurred in north-east England, particularly in Yorkshire, and in south-west England, particularly in Somerset, since 1928. There is no real evidence of any substantial decrease elsewhere, although the situation in East Anglia is still obscure.. Appreciable increases, on the other hand, seem to have occurred in western England and Wales from the Scottish border to the Bristol Channel, and in the Midlands. In the Thames basin and the south-east generally, the Heron seems to be holding its own, and possibly gaining a little in numbers. From a national standpoint the increases more than cancel out the losses, and leave the Heron in a slightly stronger position than in 1928.

Thanks to the splendid efforts of observers in all parts of the country, through whose response this experiment has been made possible, it is hoped to continue for several years the issue of this annual index of Heron breeding population. Through it we shall be able to follow for the first time the actual rise or fall of a species. How valuable this knowledge may prove can easily be imagined. Taking the bird protection aspect, for example, already the West Riding County Council has refused to withdraw protection from the Heron on being furnished by local observers with reliable evidence that the local breeding stock was small and was in danger of decreasing. While it is true that in certain cases the index might be used in the opposite direction, in the long run accurate information is likely to do more for the Heron and for bird life in general than a persistence of the ignorance which has repeatedly proved to be the worst human enemy of birds. Again, the comparisons which will soon become possible between different years and different regions will show for the first time what effect climate and other factors have on the Heron population, and whether it simply fluctuates from year to year, or is going through some consistent gradual change, or possibly has reached a more or less stable condition.

By keeping careful records of numbers, year by year and district by district, we may hope gradually to find out the real reasons for a setback or for an advance. For instance, if in one part of the country Herons show a persistent decline while elsewhere they are increasing, we can examine in what way the mortality or rate of reproduction of Herons in the affected part differ from conditions elsewhere, where the species is flourishing. The experience which is gained in this way may later be applied to the study of other species, and may add substantially to our knowledge of ornithology, by giving us the clue to such mysterious decreases as that of the Corncrake and Black Grouse in England. The way is also open to international collaboration, as the Heron population of most western European countries is now pretty accurately recorded. This index may prove the key to an international study of bird population, and may help us to know the answers to many familiar questions, at which we can now only vaguely guess.

This report is due to the collaboration of considerably more than fifty field ornithologists. First, the plan was drawn up by the Scientific Advisory Committee of the British Trust for Ornithology and of the Oxford University Committee for Ornithology. Then the help of over fifty observers was enlisted by W. B. Alexander, who organised the field work, collected the results and made a preliminary analysis of them. Then the material was passed to me to draft this report. Acknowledgments are due to all those who have helped in making this experiment a success.

SUMMARY.

A team of more than fifty observers distributed throughout England and Wales took counts between mid-April and mid-May, 1934, of the numbers of occupied nests at certain selected heronries most of which had already been recorded in the " *British Birds* Census of Heronries, 1928 ". Fifty-four of these heronries, counted both in 1928 and in 1934, and considered to represent fairly both in distribution by area and by size the composition of the breeding Heron population as a whole, were taken as the basis of an index intended to show the approximate rise or fall of Heron numbers in relation to the numbers recorded in 1928.

The national index for 1934 came out at 102 (per cent. of 1928) and on the basis of a more than 25 per cent. sample of the entire Heron population it can be stated with confidence that the number breeding in England and Wales in 1934 was fully maintained, at rather more than 4,000 pairs in all.

There is some evidence, however, that a general setback occurred after the hard winter of 1928-29, when it is possible that there may have been a decline in numbers of the order of 15 per cent., which was apparently made good by 1931. Regionally the Heron appears to have fallen below the 1928 strength in 1934 in north-east England, particularly in Yorkshire, and in south-west England, particularly in Somerset, while some increase seems probable in western England and Wales from the Solway to the Bristol Channel, and in the Midlands.

As a check upon the reliability of selecting certain heronries a large area—the Thames basin—was taken as a whole, and every heronry was counted within it. The index for this area was 4 per cent. below the national index, and it stood at the same level whether heronries new or extinct since 1928 were reckoned in the calculation or not. It is intended to continue the experiment by the issue of an annual index figure for a period of years.

REFERENCES.

NICHOLSON, E. M. Report on the " *British Birds* Census of Heronries, 1928 ". *British Birds*, Vol. XXII., pp. 270-323 and 334-372.

TUCKER, B. W. " The Heron (*Ardea cinerea*) in Somerset ". *Proc. Som. Arch. & Nat. Hist. Soc.*, Vol. LXXV., pp. 61-9, and LXXVI., pp. 63-84.

A further article, bringing up-to-date the 1928 Report, will appear in a forthcoming issue of *British Birds*.

NOTES FROM RESERVOIRS AND SEWAGE FARMS.

BROOKLANDS SEWAGE FARM, SURREY, 1931-34.

Brooklands Sewage Farm lies in the valley of the Wey three miles from where it flows into the Thames. It occupies an area of about 35 acres inside the circuit of the well-known motor racing track, which runs along one side of the farm. The opposite side of the farm is bounded by the flying ground. As a consequence the noise is at times such that ordinary speech is inaudible. This noise and the aeroplanes low overhead do not appear to disturb the birds, the fears of new arrivals probably being allayed by the behaviour of the resident Lapwings and other birds.

Although the farm is only visited by small numbers of waders—exclusive of Lapwings, Redshank and Snipe, I have never known the total number of all waders combined to exceed seventeen, and usually it is under half a dozen—a surprising variety of species has been observed, the more interesting of which are detailed below. I am indebted to Mr. Howard Bentham for the details of the previous records for the county (Surrey).

Grey Wagtail (*Motacilla c. cinerea*).—On July 5th, 1931, there was a pair with a juvenile. This young bird had apparently been reared somewhere in the vicinity, as it was still being fed and was not yet very strong on the wing.

Black Redstart (*Phœnicurus o. gibraltariensis*).—A female on March 22nd, 1931. There are about 22 records for the county in the last hundred years.

Sheld-Duck (*Tadorna tadorna*).—One bird on March 22nd, 1931; a pair on April 23rd, 1933; a pair on May 31st and June 14th, 1934. There are ten previous records, some of which may, however, refer to "escapes".

Shoveler (*Spatula clypeata*).—Have been seen in each of the last four years in May or June, but no nest has been found or young seen. There were two pairs on May 31st, 1934.

Turnstone (*Arenaria i. interpres*).—One on May 30th, 1934, seen under excellent conditions. There are four previous records for the county.

Ruff (*Philomachus pugnax*).—One on July 30th, 1934. There are three previous records.

Curlew-Sandpiper (*Calidris testacea*).—One on September 20th, 1931, and two on the 22nd. These birds were also seen by T. H. Harrisson. There is only one previous record.

Wood-Sandpiper (*Tringa glareola*).—J. B. Watson saw one on August 15th, 1934. I saw it under perfect conditions on the 16th; on three occasions I had it and a Green Sandpiper together in the field of my telescope. There are six previous records, all over sixty years old.

Green Sandpiper (*Tringa ochropus*).—Observed every autumn, the largest number being six on August 17th and 18th, 1932.

Greenshank (*Tringa nebularia*).—Two on May 30th, 1931; one on August 11th, 1932. There are nineteen previous records for the county.

AVOCET (*Recurvirostra avosetta*).—One on June 14th, 15th and 16th, 1932 (*antea*, Vol. XXVI., pp. 55/6). There are three previous records, all prior to 1847.

BLACK-TAILED GODWIT (*Limosa l. limosa*).—One on August 17th, 18th and 20th, 1932. Gone by August 25th. There are three previous records.

P. A. D. HOLLOM.

ALTRINCHAM SEWAGE FARM, CHESHIRE.

CONSIDERABLE attention has been given during 1934 to the birds of this area, and observations have been made throughout the year. They are, perhaps, worth recording in some detail for comparison with those made in 1933 (*antea*, Vol. XXVII., pp. 293-6). The following records are a *resumé* of many hundreds of notes taken during the year.

Mr. Roy Storey has furnished notes of frequent visits throughout the year; careful records have been supplied by Messrs. E. L. Arnold, G. H. Clegg, J. H. Lockett, W. Ramsden, A. R. Sumerfield, I. Whittaker, S. V. Wild and S. B. Wood; and I myself paid as many visits as possible to the farm. Most of the birds recorded have been seen by several observers; in other cases the observers' initials are given.

As usual the waders were predominant in numbers and in interest. The year was marked by the exceptional number of Ruffs seen, particularly in August and September; Dusky Redshanks appeared again and we were surprised to see one at the end of December. A Grey Phalarope was seen on the farm for the first time.

HOODED CROW (*Corvus c. cornix*).—Single birds seen on February 18th and April 11th; from December 24th to December 31st from one to three seen almost daily. Always an uncommon bird on the Cheshire plain.

CORN-BUNTING (*Emberiza c. calandra*).—On October 7th two of this very local bird (S.B.W.).

BLUE-HEADED WAGTAIL (*Motacilla f. flava*).—One male on May 17th (R.S.).

SAND-MARTIN (*Riparia r. riparia*).—With other *Hirundines* in the greatest profusion in autumn, often outnumbering the other species. At the end of July many present, and throughout August, reaching their maximum on August 30th; throughout September in smaller numbers; last seen, one on October 6th.

SWIFT (*Apus a. apus*).—Abundant at the end of July and present throughout August until September 11th in small numbers.

CANADA GOOSE (*Branta c. canadensis*).—Two skeins, about 76 birds in all, on September 3rd. Large flocks sometimes occur on the Cheshire meres but they are most irregular visitors.

SHELD-DUCK (*Tadorna tadorna*).—Two young birds on August 22nd and 23rd. (Four young birds appeared in 1933.)

SHOVELER (*Spatula clypeata*).—Fewer than usual. A pair seen at the end of May, but not known to breed, as in 1933.

Waders were as plentiful as usual and the more important are here mentioned.

RINGED PLOVER (*Charadrius h. hiaticula*).—In every month from March to November (except June). During May there was a passage in small numbers (not more than ten together); in August the peak of the migration was reached from 24th to 26th, when over 100 were counted ; numbers then fell rapidly (20-30 on September 7th), and in October and November only small parties of two to four were seen.

GREY PLOVER (*Squatarola s. squatarola*).—One on October 7th (A.R.S. and J.H.L.).

TURNSTONE (*Arenaria i. interpres*).—Seen daily from August 20th to September 4th (four on August 24th).

RUFF (*Philomachus pugnax*).—The abundance of this bird has been the most remarkable feature of the year. Single birds appeared on four occasions between March 4th and March 18th, on May 31st, and on July 1st. From August 5th to October 14th they were present in numbers on practically every visit ; on August 20th there were 17, but the peak was reached between September 5th and 7th ; on the 5th I.W. counted 52 in one flock and W.R. found 60 or more on the 7th ; on the 12th there were still 30, but numbers then dwindled, and on October 13th and 14th there were only two. A single bird on November 12th and 18th.

DUNLIN (*Calidris alpina*).—This abundant wader reached its peak in numbers between August 24th and 26th—over 100 on each day ; in 1933 the peak was reached on August 27th.

CURLEW-SANDPIPER (*Calidris testacea*).—First seen on September 5th ; 17 on September 8th ; on September 12th 30 to 35, and about 30 on September 24th ; two on October 8th and 13th. More numerous than for several years.

LITTLE STINT (*Calidris minuta*).—Single birds seen on five days in September, between the 7th and 27th ; on October 6th, 14th and 21st, on November 11th and December 16th.

COMMON SANDPIPER (*Tringa hypoleucos*).—From April 17th to September always present ; last seen on September 18th. A pair was evidently breeding on the farm at the end of May. Throughout July from eight to twelve and on August 4th about 20.

WOOD-SANDPIPER (*Tringa glareola*).—On November 11th one was seen (R.S.).

GREEN SANDPIPER (*Tringa ochropus*).—Single birds on three days in March, on April 28th, June 28th, and twice in July. On August 6th there were three and from then to the end of December from one to four on practically every visit ; six on October 11th was the greatest number seen.

SPOTTED REDSHANK (*Tringa erythropus*).—Seen on a number of occasions during the last four months of the year, but except in September only single birds. One first seen on September 5th and two throughout the month (three on September 15th) ; one on October 13th and 14th, and again on December 24th (R.S.) and 29th (A.W.B.). In 1933 seen as late as October, but this is the first real winter record for the county.

GREENSHANK (*Tringa nebularia*).—First seen on August 22nd and on most visits to the end of September one or two (three on August 31st) ; three on October 7th and 13th, and one on 25th and 28th.

GREY PHALAROPE (*Phalaropus fulicarius*).—One on October 20th (A.R.S.).

BAR-TAILED GODWIT (*Limosa l. lapponica*).—One on October 8th (W.R.).

BLACK-TAILED GODWIT (*Limosa l. limosa*).—Seen singly : one in full plumage on May 30th and 31st ; one daily from August 27th to September 7th ; one on October 28th, and one from November 4th to 6th.

CURLEW (*Numenius a. arquata*).—Considering that the estuaries of Mersey and Dee are not far distant, and that Curlews breed on the hills in E. Cheshire, surprisingly few visit the farm and they rarely come to feed on the tanks. Four on August 21st, single birds on April 28th, May 20th and August 16th and 17th ; six flying over on August 26th ; one on December 23rd.

WHIMBREL (*Numenius ph. phæopus*).—One on September 25th (W.R.).

JACK SNIPE (*Lymnocryptes minimus*).—One or two on several days in October and November—Strangely few.

BLACK TERN (*Childonias n. niger*).—On August 6th three ; one from September 1st to 5th.

LESSER BLACK-BACKED GULL (*Larus fuscus*).—From April to October often present ; a few seen on several days in June, 20 on July 1st and a large flock of 100 or so in the middle of July ; last seen on October 13th.

GREATER BLACK-BACKED GULL (*Larus marinus*).—On August 16th and 22nd, on September 8th and 12th, and October 14th, one to three seen.

SKUA (*Stercorarius* sp.).—On September 1st an immature Skua was seen at close quarters swimming and in flight ; careful observation in the field and comparison with museum skins made its identification as a Pomatorhine Skua (*S. pomarinus*) almost certain (W.R. and A.R.S.).

A. W. BOYD.

STAFFORDSHIRE RESERVOIRS.

THE drought had considerable influence on the numbers of birds breeding on and visiting the large S. Staffs. Reservoirs in 1934.

The following notes refer to Bellfields, the most westerly of these reservoirs, and to Gailey Pool, as in previous years (*British Birds*, XXVII., pp. 296-8 and *antea*), and refer to the former except when Gailey Pool is actually mentioned.

They cover a period of 13 months from December, 1933, to the end of 1934, so that the year is quoted for the month of December only.

Bellfields has been very low throughout the period, but the water at Gailey has been kept much at its usual level.

Mr. H. G. Alexander (A.) has very kindly supplied notes made on four visits, and Miss C. K. James (J.) notes made on three visits, which I have incorporated with my own.

SHELD-DUCK (*Tadorna tadorna*).—Single birds only on January 7th (A.), October 1st and 11th (J.), and December 27th.

GARGANEY (*Anas querquedula*).—On May 18th a drake (A.) ; two on July 23rd (A.).

WIGEON (*Anas penelope*).—In greatly reduced numbers : 150 or more on February 11th, whereas in normal winters there have been 500 up to 1,000 ; 23 on March 31st, and eight at Gailey ; a drake in full plumage on July 7th (B.), and 23rd (A.)—possibly a pricked bird ; fairly plentiful at the end of the year.

SHOVELER (*Spatula clypeata*).—On December 10th, 1933, between 45 and 50 in a close flock in an open pool in the ice at Gailey ; at Bellfields comparatively few all the year through—20 on February 11th, ten on March 10th, twelve on September 16th and three or four pairs on December 27th were the largest numbers seen.

POCHARD (*Nyroca f. ferina*).—As usual Gailey Pool was the more favoured reservoir of the two. From over 180 in December, 1933, and 150 on January 7th (A.) they fell off greatly ; there were 24 on February 11th and none on March 31st or on May 18th (A.) ; on July

7th there were 12 and numbers increased by September 16th to 80 or 90 and on December 27th to about 350.

TUFTED DUCK (*Nyroca fuligula*).—Not quite so numerous as usual; only two broods (six and two) to be seen on July 7th, when about 100 birds were counted; numbers in November and December, perhaps, more up to normal—November 18th about 100 (A.).

GOLDENEYE (*Bucephala c. clangula*).—Never up to usual numbers on either reservoir; twelve or more on February 11th was the largest number seen. One (♀ or juv.) as late as May 18th (A.).

VELVET-SCOTER (*Oidemia f. fusca*).—I saw one at Gailey on November 25th and noticed that the duration of its dives was far longer than that of other diving duck on the pool; this bird had been seen a week earlier (November 18th) by Messrs. H. G. Alexander and F. R. Barlow—an immature bird. The Velvet-Scoter had never been recorded in Staffordshire before.

GOOSANDER (*Mergus m. merganser*).—On December 27th, 1933, 25 or 26 brown-headed birds were swimming together in a pool in the ice at Gailey; on January 7th there were 40 there (A.); in February they were at Bellfields: 37 or 38 on the 11th (only four old drakes), and on the 19th Mr. T. Baddeley counted 41 (eight old drakes); there were still 39 there on March 9th (J.), but none on the 31st when four were at Gailey. On December 18th, 1934, there were three. The proportion of brown-headed birds is unusual.

SMEW (*Mergus albellus*).—A duck on March 9th (J.).

CORMORANT (*Phalacrocorax c. carbo*).—A few seen in six different months: one on March 31st; one on May 18th; three at Gailey on September 16th (A.); five on October 1st and two on October 11th (J.); at Gailey two on November 18th (A.), and on November 25th; two at Bellfields on December 27th.

GREAT CRESTED GREBE (*Podiceps c. cristatus*).—Bellfields, where six pairs nested in 1931, was so low that there was no possible nesting-site; on July 7th there was none on the pool at all; on July 23rd two (A.), which had probably come from Gailey where numbers were normal. On November 18th three, and at Gailey eighteen (A.).

BLACK-NECKED GREBE (*Podiceps n. nigricollis*).—One on August 13th—white faced and with very little duskiness on the neck.

RINGED PLOVER (*Charadrius h. hiaticula*).—Four on May 18th (A.); one on September 16th.

GOLDEN PLOVER (*Charadrius apricarius*).—Two on November 18th (A.), and seven on November 25th.

LAPWING (*Vanellus vanellus*).—In November in remarkable numbers on the muddy bed of the reservoir; on November 18th computed at 1,000 or more (A.), and on November 25th there were probably several thousand in all.

TURNSTONE (*Arenaria i. interpres*).—Three on July 23rd flew from N.E. to W. or S.W. and did not settle (A.).

RUFF (*Philomachus pugnax*).—One on July 23rd (A.). It was reported in *The Field* that a Ruff and two Reeves were shot at Tamworth, Staffs., on August 28th.

SANDERLING (*Crocethia alba*).—On May 18th, five which flew off to the N.W. (A.,); five on October 1st (J.).

LITTLE STINT (*Calidris minuta*).—One on October 1st and two on October 11th (J.).

GREENSHANK (*Tringa nebularia*).—Two on September 16th.

COOT (*Fulica a. atra*).—Numbers fluctuate greatly. On December 10th, 1933, about 400 on Gailey Pool, but only three on Bellfields; many in January, but never in such large numbers later in the year; comparatively few in December, 1934. A. W. BOYD.

NOTES

NOTES ON THE TREE-SPARROW, 1934.

THE following notes on the Tree-Sparrow (*Passer m. montanus*), near Great Budworth, Cheshire, were made at the same colony as the notes in *British Birds*, XXV., 278-285; XXVI., 273-4; XXVII., 259-60.

Return to nesting-trees.—First seen on February 18th; others on February 22nd, and in some numbers on February 25th.

Eggs.—Out of 64 clutches there were only two of six eggs each (which produced broods of four and five respectively). Five eggs is the usual number, but in several cases only three or four were laid. One nest contained eggs of three types: two of the brown-blotched normal colour; two of almost unicolorous dark grey and not mottled; and one white with dark grey markings.

Number of broods.—Twenty-seven boxes were occupied; of these fourteen had three lots of eggs, but only four held three broods that actually flew.

Out of 64 clutches only 42 broods came to maturity—65.6 per cent.

Size of broods:—

	No. of broods ringed.	*Broods of*						*Average.*	*Average for the year.*
		1	2	3	4	5	6		
May-June	23	4	1	5	8	5	–	3.39	3.14
July ...	13	3	5	1	3	1	–	2.54	
August ...	6	–	1	2	2	1	–	3.5	
	42								

This gives a lower average than in any of the ten previous seasons, when it ranged from 4.00 in 1929 to 3.29 in 1932.

Use of other birds' nests.—A Tree-Sparrow had two broods in a box in which a House-Sparrow nested between the broods.

In two Starlings' boxes Tree-Sparrows laid after the Starlings' broods had flown—one in June and one in July—and in one of these young were successfully reared.

A big nesting-box ("Owl-size"), which is usually occupied by Starlings, was used in July: the nest was built up in the box so that it was open to the air opposite to the hole and from this the young disappeared before they were fledged.

Enemies.—The poor average can be accounted for very largely by the activities of the Little Owl (*Athene n. vidalii*) and to a lesser degree of the stoat.

A Little Owl was seen on one occasion actually perching on a box with another close to it and there seems to be some evidence that they may actually take young from the nest: a nestling ringed on June 5th was found in a Little Owl's nest on June 9th. I noticed one very noisy brood of fledglings with heads sticking out of the nesting-hole, and they would have been an easy prey. No less than four adults were found dead on the nest and the large number of eggs that came to nothing seems to point to the untimely destruction of an unusual number of adults in the open. A stoat was seen on a box with its foot actually in the nesting-hole, and the five eggs which had been in the box were later found to be missing.

Ringed Birds.—Fourteen recoveries were made in the year, among which were :—

Number.	*Date ringed.*	*Adult or juvenile.*	*Date recovered.*	
L5739	24.7.31	adult	17.10.34	
L6392	30.5.32	nestling	7.8.34	Found dead in box 10a; it was hatched in box 13 in the same hedgerow.
NJ460	25.5.33	nestling	25.4.34	
NP694	29.5.33	nestling	3.6.34	
NS154	25.7.33	nestling	20, 22.3.34	
ME765	28.5.34	adult (ringed on the nest).	18.6.34	Trapped in company with a nestling which was not from the box in which ME765 was nesting.
E820	12.11.33	adult	28.5.34	
ME872	5.6.34	nestling	9.6.34	In Little Owl's nest.

Insects and Parasites.—I am indebted to Mr. H. Britten for the following identifications.

On a dead adult were found: A feather-mite, *Analgopsis nitzschii* Haller, and a louse, *Philopterus subflavescens* Geoff., both species common also to the House-Sparrow.

In two nests these insects were found: Moths, *Borkhausenia pseudospretella* Staint, and *Endrosis lactella* larvæ abundant. Beetles, *Enicmus minutus* L., and *Atheta nigricornis* Th.—the former associated with mould and the latter a common nest species. Mite, *Calænopsis cuspidata* Kramer. Fleas, *Ceratophyllus gallinæ* Schrank, the usual one, and

Ceratophyllus gallinulae Dale. Spring-tail, *Entomobrya albocinta* Templ.—a few. Corn thrips, *Limothrips cerealium* Hal. Earwig, *Forficula auricularia* L.—in numbers.

Several of these have already been recorded from Tree-Sparrows' nests (*antea*, XXV., 284-5). A. W. BOYD.

SPOTTED FLYCATCHERS USING SAME NEST AND REARING CUCKOO.

As it would appear to be rather unusual for a Cuckoo (*Cuculus c. canorus*) to be reared in the nest of a Spotted Flycatcher (*Muscicapa s. striata*), I may record such a case in June, 1923. The Flycatcher's nest was built in some dead ivy branches on the side of my Vicarage at Granborough, Bucks. There was apparently sufficient space above the nest for the Cuckoo to have laid her egg directly into the nest. I found two young Flycatchers hanging dead in the ivy roots below the nest. The young Cuckoo was successfully reared and seen by me for several days after it had left the nest. The Flycatchers subsequently reared a brood of two in the same nest.

On June 8th, 1924, there were two young Flycatchers in the same nest. Whilst they were still in the nest, three eggs were laid with them. By June 23rd the two young birds had left the nest and I saw them in the garden. The nest was afterwards deserted. On July 4th the Flycatcher was sitting on the same nest and on July 21st there were three young ones.

In 1925 a brood of four was reared from the same nest.

In 1927 only one pair of Flycatchers occupied my garden, and laid three times, though in each case a fresh site was chosen. Misfortune befell the first two attempts.

During the six consecutive years in which a pair of Flycatchers nested in my garden, the earliest date on which an egg had been laid was May 23rd, and the latest date for young still in the nest July 26th. CYRIL E. MARTIN.

FIRE-CRESTED WREN IN KENT AND THE BIRD'S CALL-NOTE.

A MALE Firecrest (*Regulus ignicapillus*) was watched by me in some bushes at Dungeness on December 31st, 1934, and January 1st, 1935. Though I have seen Firecrests in autumn at Dungeness several times, I have only once before seen one in mid-winter.

In view of Mr. R. M. Garnett's query concerning the call-note and the editorial comment thereon, it may be worth remarking that, in my experience, the notes of the Goldcrest and Firecrest are, as a rule, readily distinguishable, once they are learnt. In fact, both in Britain and on the Continent, nearly all my identifications of Firecrests have resulted from hearing the distinct call-note. It is not easy to describe the difference, but the Firecrest's note is, I should say, several tones lower in pitch and somewhat more grating. If the Goldcrest's note be syllabized as "see-see-see," the Firecrest's might almost be called "zup-zup". The note is more often given singly, and this may lead to error; for sometimes the Goldcrest utters its note singly, in a tone rather lower than usual, and so makes one, momentarily, suspect a Firecrest. An actual Firecrest note is, however, usually quite distinct.

The Firecrest occasionally sings in England. I have heard the song early in February in south Devon, and in March in the Weald of Kent. H. G. ALEXANDER.

RED-BREASTED MERGANSERS IN MIDDLESEX.

THE first occurrence of the Red-breasted Merganser (*Mergus serrator*) in Middlesex was recorded in 1842, and up to the end of May, 1934, it had been reported on ten or eleven occasions. During the past three months the species has been identified on three occasions at Staines Reservoir, Middlesex. An adult male was seen on December 16th, 1934, and stayed to at least January 13th, 1935. On one occasion, when the weather was favourable, the Merganser, apparently affected by the many female Goosanders present, displayed in a very active manner. On January 20th a brown-headed bird was seen and apparently left the reservoir as it was not seen again. On February 24th another brown-headed bird was seen. It seemed to be affected by the proximity of an adult male Goosander much as the adult male Merganser had been by the female Goosanders. It is highly improbable that the brown-headed birds of January 20th and February 24th were one and the same, as during the interval between the two dates the reservoir had been searched by a number of telescopes. The three birds were seen by other observers and the identification confirmed. This is of importance in regard to the two brown-headed birds as much care is necessary to separate the brown-headed Merganser from the brown-headed Goosander. An influx of birds occurred during the course of the day on February 24th. At mid-day about eighty Goosanders (*Mergus m. merganser*) were counted and by 3 p.m. this had increased to one hundred and twenty-five. A brown-headed Merganser was seen on March 3rd, which I accept to be the bird seen a week previously. WILLIAM E. GLEGG.

OYSTER-CATCHERS' METHOD OF REMOVING LIMPETS.

In view of the statement in T. A. Coward's *Birds of the British Isles* to the effect that the Oyster-Catcher (*Hæmatopus ostralegus*) is an adept at " smartly knocking the unsuspecting limpet from its hold ", a few notes on an alternative method of attack may be of interest.

The birds I watched were removing limpets from horizontal slabs of rock at Torquay. In no case did they rely solely or even, perhaps, at all, on surprise tactics. Stooping and turning one eye skywards, they tried to slip their stout, flattened bills beneath the shell. In very few cases was success instantaneous. Usually the bird would fail on one side of the limpet only to try again on the other. In only one case was an unsuccessful attack at all prolonged—one bird waited for the reappearance of a limpet several times hidden by waves. The birds seemed to know almost at once which limpets were immovable.

A reason for this was suggested by an examination of the shells they had just emptied. Some of these had a piece freshly broken from the edge, showing that this is one way in which the Oyster-Catcher manages to get its bill beneath the shell. If the latter is too strong to break (as it must be in very large limpets), there is still a chance of success—the irregularities of the rock expose some limpets to attack. I found several which, being unable to make a perfect join between their neat symmetrical shells and the uneven rock, left gaps in their armour through which any Oyster-Catcher could insert its bill with the greatest ease.

Once the bill was beneath the shell the limpets were no doubt forced to let go by a series of energetic stabs. The birds added a certain amount of leverage and the shells often flew up very suddenly, being jerked two or three inches.

G. B. Gooch.

LITTLE STINT AND SPOTTED REDSHANK WINTERING; AND GREEN SANDPIPER IN SUMMER IN SOMERSET.

On February 10th, 1935, I noticed a Little Stint (*Calidris minuta*) on Brean sands. I was immediately struck by its small size as it flew over the beach with Dunlin. Breaking off from the latter, it flew round me several times, twisting and turning at great speed and uttering a low but distinct " tchik ". Subsequently it settled on the beach, and I obtained a very close view through ×6 glasses.

On January 4th, 1935, I discovered a Spotted Redshank (*Tringa erythropus*) about a mile from the mouth of the River Yeo, near Clevedon. Since that date I frequently saw it on the same short stretch of river, the last time on February 19th, since when I have left the district. Other observers, including Messrs. W. R. Taylor, L. A. Hawkins and K. B. Rooke, also saw it. Being in winter plumage, its noticeably white under-parts and greyer upper-parts distinguished it fairly easily from the Common Redshanks at rest. In flight the secondaries appeared slightly lighter than the primaries. I wrote the call as a double " tche-wee ", quite distinct from that of the Common Redshank.

The Rev. F. L. Blathwayt informs me that neither species has been recorded as wintering in Somerset before, although several Spotted Redshanks have been seen or taken in previous autumns, while the Little Stint is scarce.

At least three Green Sandpipers (*Tringa ochropus*) at Blagdon Reservoir on June 30th, 1934, are perhaps worth noting owing to the unusual date on which they were seen. K. D. Smith.

Great Grey Shrike in Surrey.—Mr. Cecil A. Joll informs us that a Great Grey Shrike (*Lanius e. excubitor*) was observed by him and Mr. R. C. B. Ledlie on a heath in south-west Surrey on February 17th and February 24th, 1935.

The bird was watched for a considerable time at a distance of from 30 to 50 yards and was noticed to be hawking from one of the power cables or from a cross-piece on a pylon.

The characteristic tail movements, the single white bar on the wing and the black ear-coverts were all clearly distinguishable.

Ring-Ouzel in Westmorland in Winter.—The Rev. E. U. Savage informs us that a Ring-Ouzel (*Turdus torquatus*) was seen near Windermere in November, 1934, and again in the same place on February 6th, 1935, which points to the bird having wintered there.

Swallows in Yorkshire in December.—Mr. P. F. Holmes informs us that he saw a Swallow (*Hirundo r. rustica*) at Hornsea Mere on December 15th, 1934, and another on the 22nd within half a mile of the Mere.

Great Skuas in Yorkshire.—Mr. P. F. Holmes informs us that he saw two Great Skuas (*Stercorarius s. skua*) at Spurn Head on September 6th, 1934. Mr. Holmes noticed the two birds together flying from up the Humber and travelling out to sea. He had seen many of these birds a few weeks previously in Iceland, so had no doubt about their identity.

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CONTENTS OF NUMBER 12, VOL. XXVIII., MAY 1, 1935.

PAGE

Ornithological Report for Norfolk for 1934. By B. B. Rivière, F.R.C.S., M.B.O.U. 354

An Attempt to Chart Fluctuations in the Song of Song-Thrush, Blackbird and Chaffinch. By J. P. Burkitt 364

Notes :

Trapped Hedge-Sparrow Feigning Death (G. R. Mountfort) ... 368

On Pink-footed Geese (G. H. Caton-Haigh) 368

Black-throated Diver in Berkshire (G. Brown) 370

Iceland Redshank in Monmouthshire (J. G. Williams) ... 370

On some further occurrences of the Iceland Redshank in the British Isles (Dr. J. M. Harrison) 370

Early Brood of Coots in Cheshire (S. B. Wood) 372

Short Notes :—

Chiffchaff Wintering in Lancashire. Early Blackcaps in Worcestershire 372

Letter :—

Great Crested Grebes and the Drought (P. A. D. Hollom) ... 373

Review :—

" The Winter Starling Roosts of Great Britain, 1932-1933." By B. J. Marples 373

Z

ORNITHOLOGICAL REPORT FOR NORFOLK FOR 1934.

BY

B. B. RIVIÈRE, F.R.C.S., M.B.O.U.

WEATHER.

LIKE its predecessor, the year 1934 was chiefly notable for its prolonged drought. The only hard weather, though without snow, occurred during the first ten days of January. February was an extraordinarily dry and sunny month, while March, April and May were, on the whole, dull and rather cold. On June 8th commenced the spell of fine, warm, sunny weather which lasted throughout the remainder of the summer. The drought was unrelieved until October, and even in this month and the next the rainfall was much below the average, but an exceptionally wet December reduced the deficiency on the year to no more than 3.62 inches below normal (J. H. Willis).

GENERAL NOTES.

Possibly owing to the abundance of the acorn crop, extraordinary numbers of Wood-Pigeons were present in the county in the early months of the year. Early in January a huge flock was seen to come in from the sea at Mundesley (A. H. Patterson), and on January 6th and 7th flocks of about 100, in company with Rooks, were seen arriving at Cromer and passing inland to S.W. (H. Cole). Flocks of between 50 and 100 were still about at Woodbastwick in the last week in April. Most summer visitors arrived unusually late at Woodbastwick, many species being a full week behind the average date, and this was noticed also by Mr. N. Tracy at S. Wootton.

Whether owing to the exceptionally dry weather or not I cannot say, but my House-Martins appeared to have unusual difficulty in fixing their nests, that of one pair falling down no less than three times before its completion, which was not until the end of June.

The prolonged drought, as in 1933, undoubtedly made things difficult for Blackbirds and Song-Thrushes and there was a scarcity of both in gardens during the late summer.

In contrast with the late arrival of spring migrants, the return autumn migration of waders set in unusually early. Many Dunlin had arrived at Salthouse on July 19th (R. M. Garnett), and on July 21st Mr. Garnett and I counted nine Ruffs and Reeves. During August and September unusual numbers of Curlew-Sandpipers and Little Stints were met with, a flock of 16 of the latter being seen by Mr. Garnett at Salthouse on September 16th. Greenshanks were also numerous, and as the bird is seldom seen in Norfolk other than singly or in very small parties, a flock of eight, seen by me on August 19th is, perhaps, worth recording.

Some excitement was caused during the autumn by the occurrence in the county of two Buff-backed Herons. One, which I saw, shot on November 23rd, though adult and moulting its primaries, had legs and feet of a dark greenish-brown. This puzzled me until I learnt from Mr. Witherby that a number of examples of the Indian form *Ardeola i. coromanda* had been turned loose at Whipsnade and some at the Zoological Gardens, London.

MIGRATION.

I have, again, reproduced in full the diaries of my two light-ship correspondents, Mr. S. G. Sharman and Mr. W. S. Parish, and for their trouble and care in keeping these in greater detail as regards certain points suggested by me, I am deeply grateful.

I may, perhaps, remind readers that the Outer Dowsing vessel lies some 30 miles east of the Lincolnshire coast, the E. Dudgeon 21 miles N.N.E. of Blakeney on the Norfolk coast, and the Corton 3 miles out between Yarmouth and Lowestoft.

OUTER DOWSING LIGHT-SHIP (OBSERVER: W. S. PARISH).

February 16th.—Wind W.N.W. Sky-Larks, Starlings and Pipits arrived in evening and hovered and settled. Left in morning to W.

February 17th.—Sky-Larks and Starlings arriving from E. in evening. Some settled and left to W.S.W. in morning.

March 10th.—Sky-Larks, Meadow-Pipits (wing and feet sent, *B.B.R.*). Plover and Snipe flying round in evening. Those which settled left to W. in morning. Wind E.S.E.4.

March 11th.—Wind S.S.E. All the above, with Starlings and Curlews, round lantern at night. Left to W.S.W. in morning.

March 17th.—Wind W.S.W.4. Same species, with other small birds, arriving from E. in evening. Left to S.W. and W. in morning.

March 18th.—Wind W.5. Several flocks of Sky-Larks passing E. to W. during the morning. Sky-Larks, Starlings, Titlarks and Plovers around the lantern at night.

March 20th.—Wind N.N.E. Starlings, Sky-Larks, Lapwings, Curlew and Snipe flying round at night. In morning left to W.

March 21st.—Wind N. Sky-Larks travelling E. to W. during the morning. During evening Starlings, Sky-Larks, Lapwings, Snipe, Blackbirds, Fieldfares and Redwings arriving from E., flying round and settling on board. In morning left to W.

March 22nd.—Wind N. Starlings, Sky-Larks and one Robin on board at night. Left to W. in morning.

April 1st.—Wind E.N.E. Wagtail and Chaffinch in morning. Left to W.

April 2nd.—Wind E.4. Pipit and Robin in morning. Left to W.

April 6th.—Wind N.W.2. Lapwings, Snipe, Moorhen, Curlew, Blackbirds, Starlings, Sky-Larks and Chaffinches very numerous at night. Those which settled left in morning to W.

April 8th.—Wind N.E.3. Same species as on 6th with addition of large flock of Knot (wing and foot sent, *B.B.R.*) flying round at night and settling. Departed W. in morning.

April 11th.—Lapwings, Starlings, Sky-Larks, Wheatear (one) and Greenfinch (one) hovering and settling on board in evening. Appeared to come from E. Left to W. in morning. Wind E.4.

May 13th.—Wind W.N.W.4. Curlews, Plovers, Wheatears and other small birds at night. Departed in morning to W.

May 19th.—Wind S.W. As above, also Warblers at night. Departed W. in morning.

May 20th.—Wind S.W. Two Sparrows and one "Crow" came on board. Left to W.

May 21st.—Wind N.W. Wheatears, Warblers, and Pipits at night. Departed to W. in morning.

June 4th.—Wind S.E. Two Warblers during day. Left to W.

June 15th.—Wind E. Three Swallows flying E. to W.

July 5th.—Wind E.S.E. Two Warblers came on board during the day and died of exhaustion.

(Wings received between *May 13th* and *July 5th* were those of Sedge-Warbler, Wood-Warbler, and Spotted Flycatcher, *B.B.R.*)

August 15th.—Wind W.N.W. Curlews, Wheatears and Warblers at night. Left to W.

August 17th and 18th.—Wind W.S.W. Curlews and "Flycatchers" at night. Left to W.

August 23rd.—Wind W.S.W. Curlews travelling E. to W. by day.

August 25th.—Wind N.W. Wheatears on board. Departed to W.

August 26th.—Wind N.N.E. Small birds flying E. to W. by day.

August 27th.—Wind S.E. Pipits, Redstarts and Wheatears on board at night. Left to S.W.

August 29th.—Wind N.W. Swifts passing E. to W. by day.

September 5th.—Wind S.E.5. Spotted Flycatcher on board.

September 7th.—Wind S.E. Fog. Swift, Wheatears and Stints at night. Departed S.W.

September 8th.—Wind W. Wheatears and Martins by day. Left to S.E.

September 10th.—Wind S.E. Wheatears and Warblers at night. Departed S.W. in morning.

September 20th.—Wind S.W. Wheatears, Flycatchers and Martins settled during day. Departed W.

September 21st.—Wind W.N.W. Pipits on board at night. Left to W. in morning.

September 29th.—Wind S.E. Twenty to thirty Plover passed N.E. to S.W. by day. At night Starlings, Sky-Larks and Plovers flying round and settling.

October 1st.—Wind W.N.W. Sky-Larks, Wheatears and Snipe at night. Departed W.

October 2nd.—Wind W. Snipe and Plover at night.

October 5th.—Wind S.W. Starlings and Sky-Larks at night.

(Wings sent to me from the Outer Dowsing Light-vessel during the autumn were as follows :—*August 15th,* Wood-Warbler. *August 27th,* Common Redstart. *September 10th,* Common Wheatear and Common Whitethroat—*B.B.R.*)

EAST DUDGEON LIGHT-SHIP (OBSERVER : W. S. PARISH).

November 13th.—Wind E. Starlings, Sky-Larks, Blackbirds and "Crow" flying round and settling by night. Left at daylight to S.W.

November 14th.—Wind S.E. Two Bramblings settled and left W.

November 15th.—Wind E.S.E. Starlings and Blackbirds flying round and settling in evening. Arrived from N.W. and departed S. at daylight. *November 16th.*—Ditto.

CORTON LIGHT-SHIP (OBSERVER: S. G. SHARMAN).

February 17th.—Fog. Larks in flocks of ten to twenty flying E.S.E.

February 20th.—Wind W.N.W. Starlings and Larks, small flocks to E.S.E.

February 23rd.—Fog. Starlings on board.

February 28th.—Wind S.S.W. Linnets coasting S.

March 7th.—Wind S.S.W. Flocks of Starlings flying E., 6-9 a.m.

March 8th.—Wind W. Rooks (two to five) flying W.S.W., 6-11 a.m.

March 15th.—Wind S.S.W. Rooks (about 200) flying E.S.E., 6 a.m.

March 16th.—Wind S.W. Waders passing 11 p.m.-2 a.m.

March 17th.—Wind S.W. Rooks in small parties flying W., 7-8 a.m.

March 19th.—Wind S.S.W. Finches, Wagtails and Rooks, all small parties, flying W., 6-8 a.m.

March 20th.—Wind W.S.W. Small flocks Rooks and Finches to W., 6-9 a.m.

March 22nd and 23rd.—Starlings, Larks and Waders at night.

March 24th.—Wind S.W. Linnets, Finches and Larks, small flocks, to W.N.W., 6-7 a.m.

March 26th.—Wind S.W. Small lots of Blackbirds flying W., 7 a.m.

April 3rd.—Wind N.E. Wagtails in small lots flying W., 5-7 a.m.

April 5th.—Wind E.N.E. Larks and Finches in flocks up to twenty flying S.W., 6 a.m. till noon.

April 10th.—Wind S.E. Large flocks of Finches and few Larks flying W., 6 a.m. till noon.

April 12th.—Wind S. Three flocks of Sparrows and few Blackbirds and Rooks flying W., 6-8 a.m.

April 13th.—Wind W.S.W. Large flocks of Larks flying S.S.W., 6-7 a.m.

April 15th. Wind S. Large flocks of Larks, five Rooks and three Starlings to W., 6-7 a.m.

April 16th.—Wind S.W. Several Larks, few "Flycatchers", few Chaffinches and Sparrows early morning. Flying to S.W. and W.

April 28th.—Wind E.S.E. Swallows and Martins and one very large flock of Starlings travelling N.N.E. in early morning.

May 5th.—Wind S.W. Larks flying W. early morning.

May 6th.—Wind S.S.E. Swallows flying W. early morning.

May 11th.—Wind S. Few "Flycatchers" during the day.

May 12th.—Calm. Six Hedge-Sparrows at 7 a.m. Proceeded W.

May 15th.—Wind N.W. Two Whitethroats and four Willow-Wrens between 6-8 a.m. Proceeded W.

May 16th.—Wind S.W. Small flocks of Swallows flying W. Three Whitethroats, 7-10 a.m.

May 19th.—Wind S.S.W. Small flocks of Swallows and Martins flying W., 7-9 a.m.

May 21st.—Wind S.S.W. Four Willow-Wrens and a Whitethroat between 7 and 8 a.m.

June.—Swifts passing E. to W. nearly every day this month, and on 19th and 26th all day.

July 6th.—Calm. Few "Flycatchers", including Willow-Wrens. Direction of flight to W. and S.W.

August 20th and 22nd.—Swifts proceeding W. in late afternoon.

August 25th.—Wind S.E. "Flycatchers" passing S.W. in afternoon.

August 27th and 28th.—Wind S.E. and S. Big migration of Wheatears, Redstarts, and small Warblers (? Chiffchaffs) and Spotted Flycatchers (two) flying S.W. and W.

August 31st.—Wind S. Few "Flycatchers" flying S.W., afternoon.

September 1st.—Wind S.E. Wheatears and Willow-Wrens at noon. Direction of flight S.W.

September 4th and 5th.—Chaffinches and Greenfinches flying S.W. in afternoon.

September 7th.—Wind S.E. Big migration of Chaffinches, Wheatears and Redstarts to W. and S.W. in afternoon.

September 13th and 14th.—Wind E.N.E. Wheatears, Chaffinches, Larks and Redstarts flying S.W. from noon till sunset.

September 28th.—Wind S.E. Small flocks of Lapwings flying W.S.W. in afternoon.

October 10th, 11th and 12th.—Wind W. Large flocks of Starlings, Larks and Finches passing W.S.W., flying close to surface of sea, continuously from 10 a.m. to 5 p.m. on first two days, and from noon till sunset on 12th.

October 13th.—Wind W.N.W. Larks and Starlings to W., early morning.

October 14th.—Wind W.N.W. Starlings to W., early morning.

October 15th and 16th.—Wind W.N.W. and N. Large flocks of Starlings and Larks flying W. all day.

October 17th.—Wind N. Large flocks of Sparrows flying W. in morning.

October 18th and 19th.—Wind W.N.W. Starlings, Larks and Blackbirds to W. in morning.

October 20th.—Wind W.S.W. Large flocks of Rooks, few Sparrows, and two Tawny Owls to S.W. in afternoon.

October 23rd and 24th.—Wind W.S.W. Rooks, Jackdaws, Starlings and Larks passing W. and W.S.W. all day.

October 25th.—Wind S. Large flocks of Rooks, Starlings, Chaffinches, and extra large flocks of Greenfinches, proceeding W. and S.W. from 9 a.m. till noon.

October 26th.—Wind S.W. Large flocks of Starlings to W.S.W. in morning.

October 30th and 31st.—Rooks, Starlings, Sparrows and Chaffinches to W. and S.W. in afternoon.

November 1st.—Wind W.N.W. Starlings and Sparrows to W. in afternoon.

November 8th.—Wind N. Large flocks of Rooks passing W. in afternoon.

November 12th.—Wind W.N.W. Large flocks of Starlings all day. Fog.

November 13th.—Wind E.S.E. Starlings and Larks to W.S.W. A few Goldcrests in morning.

November 15th.—Wind E. Flocks of Finches to S.S.W. Two Waterhens flying W.S.W. in afternoon.

November 17th.—Wind E.N.E. Starlings and two Owls, thought to be Tawny Owls, passed W. in morning.

November 18th and 19th.—Wind W. Starlings and Blackbirds, very numerous, passing W. in morning.

A point of interest in the above notes, to which attention may be called, is the fact that at the Outer Dowsing vessel not a single record occurs of a return passage of winter visitors from west to east in the spring, whereas at the Corton an emigration of Rooks, Starlings and Sky-Larks to E.S.E. and E. was noted on four days during February and March. This tends to confirm the view which I have expressed before (see *A History of the Birds of Norfolk*, p. XLIII.), namely that few spring emigrants take their departure from the coasts of Norfolk and Lincolnshire, the favourite point of embarkation, to which birds fly even from beyond the Wash, being the Suffolk coast in the neighbourhood of Lowestoft.

CLASSIFIED NOTES.

GOLDEN ORIOLE (*Oriolus o. oriolus*).—At Horsey, on June 29th, a male was heard and seen by Mr. Crees, Major Buxton's keeper, who acquired an intimate knowledge of the species in Switzerland.

SISKIN (*Carduelis spinus*).—Siskins were unusually abundant in the early months of the year. On April 11th a flock, which I estimated at between 150 and 200, were feeding on some alders bordering a lane, and moved leisurely on from tree to tree just in front of me as I walked, for a distance of about half a mile. With them was a sprinkling of Goldfinches.

COMMON CROSSBILL (*Loxia c. curvirostra*).—Crossbills seem to have been unusually scarce in 1934. Mr. N. Tracy wrote me that a three days' tour of the breck districts during February only revealed two nests, while in the Castle Rising area, where they are usually abundant, none had been seen since May, 1933. I saw a party of six, including two red males, at Langmere on May 24th.

ROCK-PIPIT (*Anthus spinoletta* ? subsp.).—A great passage of Rock-Pipits was observed by Mr. Garnett at Cley and Blakeney on October 18th, and at Holme-next-the-Sea on the 19th. Large numbers were amongst the *Suæda* bushes, and equal numbers flying west. It is somewhat extraordinary to recall that a similar migration was observed by Mr. D. Lack at Scolt Head on October 19th, 1930 (*antea*, Vol. XXIV., p. 311), and an all-day migration of the same species towards the Norfolk coast at the Cockle light-ship on October 18th, 1908. (*Bulletin, Brit. Ornith. Club*, XXVI., p. 248.)

BRITISH WILLOW-TITMOUSE (*Parus a. kleinschmidti*).—On May 15th I was shown the nesting sites of two pairs of Willow-Tits within the county, these being some 200 yards apart in the same wood. Both nesting holes showed evidence of having been excavated by the birds themselves, and a few chips of dead wood were to be found beneath each. Both were in rotten birch stumps, one about two feet and the other about eight feet from the ground. At one nest both birds were feeding young, and at the other the male was feeding the female, which was anxious to go on to her nest, and so presumably had laid. Both pairs of birds were typical, both in appearance and as regards their notes. In general appearance they gave an impression of looser plumaged and untidier birds than Marsh-Tits. The dull crown of the head could often be detected, and occasionally—particularly when a bird clung, with back towards one, outside the nesting hole—the pale secondaries. The note of both pairs was a low pitched " Tchay " usually repeated twice.

FIRECREST (*Regulus i. ignicapillus*).—One was seen at Blakeney Point by Messrs. J. Steele-Elliott and C. Graham on October 1st (C. Graham).

WHITE-SPOTTED BLUETHROAT (*Luscinia s. cyanecula*).—I recently saw in the collection of Mr. F. E. Gunn, the Norwich taxidermist, a male White-spotted Bluethroat in summer plumage, labelled in the handwriting of the late T. E. Gunn : " 30th April, 1906, picked up dead at Sheringham ". Mr. F. E. Gunn assured me that he remembered this bird being brought in in the flesh. In reply to my query as to why it had not been recorded, Mr. Gunn told me that during the latter part of his life his father seldom recorded any rarieties, more particularly if he thought there was any chance of disposing of them to a collector. This I believe to be a fact, though whether, after a period of nearly thirty years, this bird should be accepted as an authentic Norfolk specimen, is perhaps doubtful. The only record of this species for the county is that of a male seen by Mr. R. M. Garnett at Salthouse on April 7th and 8th, 1930 (*antea*, Vol. XXIII., p. 339).

SHORT-EARED OWL (*Asio f. flammeus*).—No more than two pairs of Short-eared Owls appear to have bred this year in the Horsey-Hickling area (A. Buxton and J. Vincent), where in 1933—a vole plague year—some eighteen or twenty pairs nested. Voles appear to have been scarce in 1934. From Horsey, Major A. Buxton writes of them as " very scarce or absent ", and from Hickling, Mr. J. Vincent as " very scarce ".

HOBBY (*Falco s. subbuteo*).—A pair of Hobbies were seen at the 1933 nesting site on May 24th and on June 26th ; the female was seen to leave and return to last year's nest (an old Crow's) (S. H. Long). Whether they were successful in rearing a brood, however, is uncertain.

? SPOTTED EAGLE (*Aquila clanga*).—A bird which he believes to have been a Spotted Eagle was seen by Mr. Jim Vincent at Hickling on March 8th. In a letter to me, written on the same day, Mr. Vincent described it as being very dark brown in colour with a few light markings on the shoulders. " Tail short and head drawn in to body. No up-turned curve of primaries in soaring. Looked bigger than an Osprey, from which latter its soaring movements differed ". I need hardly add that Mr. Vincent knows Ospreys extremely well, as also most Raptorial birds.

A bird answering to the same description was seen early in February at Shadwell by Mr. Wilson, head keeper at Shadwell Court, who noted that it did not feed on rabbits but on " smaller stuff ". A similar bird was also seen at Waxham on March 3rd (J. Vincent).

MARSH-HARRIER (*Circus æ. æruginosus*) and MONTAGU'S HARRIER (*C. pygargus*).—Both species bred in about their usual numbers, which could probably not now be exceeded within the limited area where they are preserved.

Ornithologists, and all " Norfolkers " who care for their native fauna, owe a deep debt of gratitude to Lord Desborough and Major Buxton for their protection of these grand birds, which are now the most characteristic, and, to my mind, attractive feature of a certain part of Broadland during the summer months. Is it too much to hope that one day other Norfolk landowners will take the same sporting and enlightened view?

HEN-HARRIER (*C. c. cyaneus*).—Hen-Harriers were, I believe, more common than usual during the winter 1934-35. I frequently saw one, and occasionally two, on the Upton Marshes. One or two were often seen about Salthouse (R. M. Garnett), and one at Scolt Head (D. Lack).

WHITE-TAILED EAGLE (*Haliæetus a. albicilla.*)—During March and the early part of April one was frequently seen in the neighbourhood of Melton Constable and most often near the lake in Melton Constable park (M. Lascelles).

HONEY-BUZZARD (*Pernis a. apivorus*).—A bird of the year was seen at Catfield on September 20th (Lord William Percy).

OSPREY (*Pandion h. haliætus*).—One was seen at Rollesby and Ormesby early in May, and one at Hickling on June 9th and July 8th (J. Vincent).

SPOONBILL (*Platalea l. leucorodia*).—Several Spoonbills, as usual, put in an appearance during the spring. On Breydon one was seen from April 18th to 20th, five from June 8th to 10th, and three on June 14th (S. H. Long and A. H. Patterson). One visited Horsey from April 21st till May 5th (A. Buxton). One was seen at Salthouse on May 29th (M. Barclay), while at Hickling one was seen on June 9th and two stayed from July 1st to 8th (J. Vincent).

COMMON BITTERN (*Botaurus s. stellaris*).—Major A. Buxton tells me that this spring ten could be heard booming on, or close to the boundary of, the Horsey Estate. On July 26th—a late date—a nest with two eggs was found in a locality in the Yare valley, where they have not been known to nest before.

FLAMINGO (*Phœnicopterus r. antiquorum*).—One was observed on Breydon from July 14th to 23rd (S. H. Long). So many of these birds are kept in semi-captivity that this must be regarded as a probable "escape".

GARGANEY (*Anas querquedula*).—Garganeys, which between 1928 and 1931 bred in greatly increased numbers in the county, have, during the past three seasons, again become very scarce. Capt. H. J. Cator tells me that none appeared at Ranworth this year, and only two pairs bred at Hickling (J. Vincent).

BLACK-NECKED GREBE (*Podiceps n. nigricollis*).—On May 13th I had a close view of one in summer plumage on Hickling broad. When approached too closely it several times took to its wings in preference to diving. It remained on the broad until May 26th (J. Vincent).

CREAM-COLOURED COURSER (*Cursorius c. cursor*).—As already reported (*antea*, p. 242) a Cream-coloured Courser was shot on the beach at Thornham on October 3rd. It was a bird of the year, still retaining some feathers of the juvenile plumage, and is now in the Norwich Museum.

This is the first specimen to be obtained in Norfolk. It was previously included in the Norfolk list on two sight records, one in the autumn of 1847 and the other in the autumn of 1855 or 1856.

DOTTEREL (*Charadrius morinellus*).—One was seen at Salthouse on September 5th and three in the same locality on September 17th (R. M. Garnett).

TEMMINCK'S STINT (*Calidris temminckii*).—On May 31st, near Cantley, I was fortunate enough to have the opportunity of watching—in bright sunshine and at no more than ten yards' distance—a Temminck's Stint. When first put up it flew to a mud wall close by, where it settled itself into a small depression, tucked its bill behind its scapulars, and went fast asleep. After sleeping for nearly a quarter of an hour it woke up, apparently thoroughly refreshed, and preened its feathers and ran about the wall. Eventually it rose high in the air and flew straight away out of sight.

In general appearance it resembled very closely a miniature Common Sandpiper, particularly in the well-defined margin between the pale brown of the upper breast and the white underparts. The most striking features in flight were the very broad white edges and dark brown centre of the tail, which looked altogether bigger than that of the Little Stint. The legs and feet were pale green.

WOOD-SANDPIPER (*Tringa glareola*).—On May 30th I saw two at Horsey, which Major A. Buxton had had under observation since the 26th.

ICELAND REDSHANK (*Tringa t. robusta*).—On September 1st a bird of this race was shot by Mr. M. L. Pilkington at Thornham, bearing a ring: "Skovgaard S.9963". It proved to have been ringed as a nestling on July 21st, 1934, at Myvatn, North Iceland (E. P. Leach).

GREY PHALAROPE (*Phalaropus fulicarius*).—One was seen at Salthouse on October 21st (R. M. Garnett).

RED-NECKED PHALAROPE (*Phalaropus lobatus*).—Single birds were seen at Salthouse on September 7th, September 29th, October 5th and October 21st (R. M. Garnett).

AVOCET (*Recurvirostra avocetta*).—On August 2nd two arrived on Breydon where they remained for a few days.

BLACK-TAILED GODWIT (*Limosa l. limosa*).—Black-tailed Godwits passed through, as usual, in considerable numbers during the spring migration. The largest number seen together was fifteen on March 28th, at Salthouse, by Mr. Garnett. One pair raised high hopes that they would nest in the county, and it is, indeed, possible that they actually did so. This pair frequented some dry marshes throughout April, May, and the early part of June. From the latter part of May onwards the female was often not to be seen, while the male mobbed anyone coming on to the marsh, flying round on quivering wings and calling loudly (J. Vincent). If they had a nest, which their behaviour suggested and which Mr. Vincent firmly believes, it is quite possible that this was destroyed by cattle or horses, many of which were being grazed on these marshes. They were last seen on June 7th.

WOODCOCK (*Scolopax r. rusticola*).—As seemed probable at the end of 1933 the past winter proved a good one for Woodcock. Holkham beat its own previous record by twenty with a total of 354 shot (D. McEwan, *pp.* S. H. Long).

WHITE-WINGED BLACK TERN (*Chlidonias leucopterus*).—A White-winged Black Tern was seen at Cley by Mr. R. M. Garnett and Miss M. Barclay on June 10th.

SANDWICH TERN (*Sterna s. sandvicensis*).—The majority of Sandwich Terns again bred at Salthouse where some 800 nests were counted (Holman). Some 60 pairs nested at Scolt Head (Chestney) but none at Blakeney Point.

ROSEATE TERN (*Sterna d. dougallii*).—One pair nested and hatched both eggs (Chestney).

LITTLE GULL (*Larus minutus*).—An immature bird was seen at Salthouse on February 20th (R. M. Garnett).

AN ATTEMPT TO CHART FLUCTUATIONS IN THE SONG OF SONG-THRUSH, BLACKBIRD AND CHAFFINCH.

BY

J. P. BURKITT.

After many years of observation and many hundreds of notes, I attempt here to put the songs of Song-Thrush, Blackbird and Chaffinch—each collectively—into a brief summary, hoping it may give an added interest to those who, whether countrymen or town dwellers, delight in our ordinary birds' song. Experience in my district of north-west Ireland may differ from other parts, but it may, at any rate, be a basis for comparison. That there are very distinct fluctuations in song, both in regard to parts of the day and parts of the season, there can be no question. The average habit of a species is hard to determine for two main reasons: first, because individual birds may vary from it by reason of their family fortunes; and secondly, because a normally good time for song may by bad weather become a time of silence. If all birds had uniform family fortunes through the season, I am sure we should have extraordinarily well-marked crests and troughs in song. But it is largely because family fortunes differ that we enjoy a more even distribution. It will be understood that increase of song herein may be considered due either to more song from each bird or to more birds singing, or both.

Song-Thrush (*Turdus e. ericetorum*).

The Song-Thrush begins in the season (late December or early January) by singing, if the weather is fair, in the early morning from dusk to, say, 9 a.m., and as the days pass through January more individuals will join in and they may be heard later in the forenoon, but generally best from 8 a.m. to 10 a.m. Later still in the month we may hear them in the afternoon, and as January passes Thrush song increases to a maximum round the last days of January and the first days of February. But after that the song gradually diminishes so that from being small after the middle of February, it may be nothing by the 11th of March. Thrushes have then altogether given up what I call day song (till a later date), but there has all along continued a short morning dusk song, though with few birds singing compared with later on. However, as the day song was diminishing, an evening song started which, at its best later on, occurs between the times of one and a half hours and half an hour before sunset. This evening song begins between, say, the 3rd and the 12th of February, according to weather. In its turn it dwindles and will probably have disappeared by the 24th of March if not before. But again another song has arisen at dark evening dusk. This is a short but important and attractive song period lasting from ten to twenty minutes. It is separated by a gap of, say, three-quarters of an hour from the evening song. It may begin by the 10th of February. It, of course, varies with the weather. It persists in varying degree throughout the whole season, and Thrushes may be heard at that hour even when there are none singing at any other time in the whole day except at dawn.

In April there seems a certain revival of the January and February periods, e.g., some song in the early forenoon and early evening ; but the song is not very marked in daytime till it expands at the end of April and the first week of May, and keeps on its peak level till, say, the 23rd of May, when it diminishes and turns more into an evening song. In some years in early June there is practically no Thrush song in the daytime, while in others there is a fair amount. But a little evening song may possibly be heard from Thrushes right up to the end of June. (From comparisons I made with Messrs. Alexander in 1920, the south-east English song-season lasts some weeks longer than mine. And I may note that while the song of Thrush, Blackbird and Chaffinch dies off here in June, yet with many species there appears a resuscitation in the latter half of June, especially noticeable about the end of the month, e.g. Lark, Whitethroat, Willow-Wren, Sedge-Warbler, Corn-Crake, Woodcock, Snipe, but all ceasing within July.)

BLACKBIRD (*Turdus m. merula*).

While with Thrushes the song (excepting the dawn song) passes forward on the clock round to evening dusk as I have described, with Blackbirds the reverse is the case. Their song begins in the evening dusk and develops backwards. The order is as follows : First the song at evening dusk ; then there develops what I have called with the Thrushes an evening song (before dusk) ; then, later, there is added some afternoon song, and finally song at any time of day. Blackbirds' song taken collectively does not seem to exhibit a diminuendo period in mid-season as is shown in Thrushes' song. Blackbirds make their début in the evening dusk song, which I have described in regard to Thrushes, but not till late in February or early in March, and they do not become very noticeable till after the middle of March, and may not be in full force at this hour till the latter half of April. Blackbirds do not continue quite so far into the dark as Thrushes do ; the Thrushes prefer the very last minutes.

The evening song of the Blackbird shows itself about the 18th of March and is well established by the 6th of April. At that date it is not lengthy and it ends about half an hour before sunset, but by the 23rd of April it may extend back over a two-hour period before dark. Some afternoon song from Blackbirds may be heard from the end of March, but it is not until mid-April that the day song of Blackbirds reaches back to early forenoon ; and their day song, over all, does not reach its peak in volume until the first week or later in May. Through the rest of May and the first week of June Blackbirds' day song may in some years be more prominent than that of Thrushes, but the weather needs to be nice. After mid-June Blackbirds have practically ceased entirely.

CHAFFINCH (*Fringilla c. cœlebs*).

Between 8 a.m. and 11 a.m. is the most likely time to hear any Chaffinches singing in February and early March, but as time passes, and especially if the weather is nice, some may be heard up to 1 p.m. From early March there is also a little song in an hour before sunset. They are silent and probably away from their territories for long periods in the middle of the day, especially from 1 p.m. to 4 p.m., and this may continue right through March. The latter half of March gives very little Chaffinch song. In the early days of April there is again a small rise in song and it increases to the 23rd of April when it is very good. The sunset song has now become a notable period in the day, and on through the season this will probably be the most distinct period and least dependent on weather. The general song will, as I have said, probably have reached its high level by the 23rd of April and remain so to the first week of May. The song then diminishes to very little in the last days of May or first days of June ; but then, in most years, there is again a remarkable recrudescence for a week or so ; this in turn dies away completely before the end of the second week in June, though in some years a bird may rarely be heard up to the last days of June.

The Chaffinch seems to be a sleep-loving bird though his day manner is far from sleepy. His morning song does not begin at earliest till, say, 15 minutes after sunrise in February and 27 minutes before sunrise in June. His sunset song very often stops exactly at sunset, and very rarely goes to 15 minutes past sunset. It will in general be best heard somewhere between one and a half hours and half an hour before sunset. By comparing these Chaffinch periods with the morning and evening dusk songs of Thrush and Blackbird (see below), it will be seen that the latter song has not begun in the evening till nearly three-quarters of an hour after the last Chaffinch has ceased, and the last notes of it will be about an hour after the Chaffinch. Again it will be seen that the Chaffinch's earliest song in the mornings is—right through the season—just an hour later than the first notes of the dawn chorus. His sunset song is specially attractive as it often fills a period when there is little other song; and his spring morning song, being not too early, cheers us at our breakfast time.

The Dawn and Evening Dusk Choruses.

Reverting to the morning dusk song, its start by Thrushes in January is a feeble prototype of the great dawn chorus of later in the season. This dawn chorus is, like the evening dusk song, a very short business. The Thrushes do not make it really well until the first days of March; a Blackbird may possibly be heard coming into it then, but the Blackbirds do not join in in force till the first days of April. It goes on increasing in volume (not in length) through April. It is always, through the season, far better than its evening dusk counterpart. Robins are in both these choruses but never the Chaffinch. His song, as described above, begins later in the morning and ends earlier in the evening. The Mistle-Thrush may be heard in the dawn chorus. The dawn chorus continues good to the end of May, and may not quite cease till perhaps a week or even a fortnight in June. The evening dusk chorus, by the last week of May, tends to change into an extended and dissipated evening song.

The dawn chorus lasts from fifteen to thirty minutes. It begins at about 40 minutes before sunrise in February; 45 minutes before it at mid-March; 56 minutes at mid-April; 70 minutes at the end of April, and 84 minutes at the end of May. The evening dusk chorus, between February and the end of April, is from ten to at most thirty minutes in length, but towards the end of May it, as I have said, may lose its characteristics. In February and March its latest notes extend to about 45 minutes after sunset, at the end of April to 62 minutes and at the end of May to 76 minutes after sunset. These are maxima. I should explain that by sunset and sunrise I mean the theoretical time here irrespective of local physiography.

In most species there is more or less a siesta from song in the middle of the day (somewhere between 1 p.m. and 4 p.m.) throughout the song season.

NOTES

TRAPPED HEDGE-SPARROW FEIGNING DEATH.

Anyone who has trapped Hedge-Sparrows (*Prunella modularis*) knows that, in the excitement of being released, they will go through most of the typical actions of sexual display such as raising or dragging one wing, shuffling along the ground, half-rolling and so forth. One which I have frequently trapped has just shown me a new action which I have not seen described before. As I knelt by the trap holding the gathering cage for the bird to enter, it stopped the usual display, stood quite still for a second and then, sinking back on its tail, half closed its eyes, very slowly bent its head back until its beak was vertical, then toppled over sideways and lay on its back with its feet in the air. Wondering if it had died from excitement I removed the gathering cage from the door of the trap and put my hand in to pick it up. Just before I could touch it, it rolled quickly over and made a dash for the door! I do not believe the bird had suffered temporary unconsciousness from syncope as it is well accustomed to being released from the same trap and behaved perfectly normally afterwards. G. R. Mountfort.

ON PINK-FOOTED GEESE.

As I have killed hundreds of Pink-footed Geese (*Anser brachyrhynchus*) since the war, and have often had a dozen or more hanging in the game house, I have had, perhaps, better opportunities of noting the plumage than many naturalists. It may, therefore, be of interest if I criticize the description of the young Pink-footed Geese given in the *Practical Handbook.* I refer to the bird in its first autumn and winter after its arrival here in September.

First, with regard to the soft parts, the amount of pink on the bill appears to be an individual peculiarity and in no way connected with age. Many young birds have most of the bill pink, and some old ones have only a pink bar behind the nail. The latter marking is not common in either old or young.

Next, as regards the legs, these in young birds on first arrival are yellow but this colour is soon lost. In some by the middle of November, and usually by Christmas. A few birds retain the yellow on the front of the tarsus throughout the winter. When the yellow fades the legs are *very pale* pink, quite unlike the deep pink of the old bird. In some, which I take to be very old birds, the legs are almost purple.

In a row of Geese hanging up in my game house, the young can be picked out at a glance whether the upper- or under-side is looked at. In the former position the feathers of the back are without the broad buff edges of the old birds, giving a much darker appearance. The under-side has a marbled appearance quite unlike the almost uniform grey of the adult. This plumage appears to be retained throughout the winter.

With regard to food I do not think these birds *ever eat* clover. On arrival they resort to the stubbles, preferably barley, but oats are readily eaten and sometimes wheat. They will eat the young self-sown corn if the grain has sprouted as it does in a wet autumn, also the young rye grass. When the stubbles are done they go to the potato fields where masses of small and damaged potatoes are left. These, when frozen, become soft and are readily eaten. Later, when the young wheat is coming up, they resort to the wheat fields, but they do not seem to care much for winter-sown oats. At the end of the winter they resort to the carrs (fens)—where the young grass has usually begun to grow—and the grass fields adjoining the upper part of the Humber where they feed on young grass. Since the war they have increased greatly in Lincolnshire, and now visit not only the North Wolds but the potato-growing districts of south Lincolnshire, but they seldom visit the South Wolds about Louth which was their principal haunt a hundred years ago.

During recent years I have kept a careful record of the weights of all the Geese I have shot, and I now find that it works out according to the following table.

Weight.	*Number.*
lbs. 8	5
,, 7½ to 8	8
,, 7 to 7½	48
,, 6½ to 7	53
,, 6 to 6½	126
,, 5½ to 6	50
,, 5 to 5½	39
,, 4½ to 5	7
,, 4	1
Total	337

To a certain extent weight seems to depend on age; the very light weights being usually young birds in early autumn, while the very heavy birds always show signs of old age. In a season in which food is abundant all are slightly heavier.

The Bean-Goose is now almost extinct here. I have not seen one for several years. When I was a boy they were not uncommon in small parties in the low country bordering the coast. G. H. CATON HAIGH.

BLACK-THROATED DIVER IN BERKSHIRE.

AN adult female Black-throated Diver (*Colymbus a. arcticus*), in winter plumage, was caught on a trimmer, baited with dace, for pike, on March 8th, 1935. A cold north-east wind was blowing at the time, and had been blowing for 24 hours or so. The line was set from the Berkshire side of the Enborne river, which forms part of the boundary between Hampshire and Berkshire. The bird was also landed on the Berkshire side, so I think it can be claimed for that county.

GEORGE BROWN.

ICELAND REDSHANK IN MONMOUTHSHIRE.

ON November 3rd, 1934, whilst observing wildfowl on the tidal flats at Peterstone Wentloog, Mon., I noticed a single Redshank feeding at the bottom of a main drain.

As it appeared larger and darker than the usual Common Redshank, and as I had already obtained an example of the Iceland race from the same locality during December, 1933, I thought it might be another and proceeded to stalk and shoot the bird.

It proved to be an adult male and its identity as an Iceland Redshank (*Tringa totanus robusta*) has been kindly confirmed by Mr. H. F. Witherby.

Both the specimens I have secured were single birds and I never heard either utter a single note. Messrs. Ingram and Salmon also noticed this silence in some Redshanks, apparently of the Iceland race, at Kenfig Pool in Glamorganshire.

In life the Iceland Redshank looks very much darker and larger than the Common Redshank. J. G. WILLIAMS.

ON SOME FURTHER OCCURRENCES OF THE ICELAND REDSHANK IN THE BRITISH ISLES.

IN *British Birds*, Vol. XIV., p. 280, the late Mrs. Meinertzhagen (Miss Annie C. Jackson) detailed the British occurrences of the Iceland Redshank (*Tringa totanus robusta*) and listed in all twelve examples, seven of these being for Scotland, three for England and one each for Wales and Ireland. More recently Geoffrey C. S. Ingram and H. Morrey Salmon (*antea*, Vol. XXVII., pp. 358, 359) record a specimen obtained in Wales and three others seen, which they considered as of this race, while there is the example, recorded by H. F. Witherby and Miss E. P. Leach, which refers to a bird ringed in Iceland and recovered in Orkney (Vol. XXVI., p. 359).

Hartert (*Vög. pal. Fauna*, Vol. II., pp. 1610, 1611) gives the wing measurements of the typical race as 145-161 mm., and quoting Schiöler (*Dansk Orn. Foren Tidskrift*, XIII., p. 211) for *robusta* 157-171 mm., the majority 160-166 mm. for males, and 158-170 mm. for females.

The status for *robusta* as defined in the *Practical Handbook* as probably a regular autumn to spring migrant, is well substantiated by the fact that of thirteen Redshank received by me during the seasons 1933, 1934-35, and one prior to this, 1911, no fewer than eleven are, on account of their longer wing measurements, stouter legs and feet, or darker upper-parts when taken in conjunction with a long wing, referable to *robusta*. In the series I have examined, the upper-parts of the typical race are of a fairly light shade of bronze brown, some lighter, some darker, whereas these parts in *robusta* are of a slate colour with a distinctly greenish sheen, and in a series appear darker. With regard to the undersides the amount of spotting and streaking is very variable in both races, and would not seem to provide any reliable difference. It must be recognized that there are individuals in which the measurements overlap and in which the colour distinctions are indeterminate.

Below are the data of the eleven examples in my collection which appear to be of the Icelandic race :—

Date.	*Sex.*	*Age.*	*Skull.*	*Locality.*	*Wing.*
19. x.34.	♀	Imm. to 1st winter.	Incompletely ossified.	Tetney Lock, Lincolnshire.	171.5 mm.
19. x.34.	♂	Imm. to 1st winter.	Incompletely ossified.	Tetney Lock, Lincolnshire.	163 mm.
19. x.34.	♂	Imm. to 1st winter.	Incompletely ossified.	Tetney Lock, Lincolnshire.	162 mm.
19. x.34.	♀	Imm. to 1st winter.	Incompletely ossified.	Tetney Lock, Lincolnshire.	174 mm.
19.ix.34.	♀	Imm. in full moult.	Not examined.	Rye Harbour Sussex.	169 mm.
4.xi.33.	♀	1st winter.	Lightly ossified.	Pegwell Bay, Kent.	167 mm.
10.xi.34.	♂	Imm. to 1st winter.	Incompletely ossified.	Pegwell Bay, Kent.	166 mm.
4. i.35.	♂	Imm. to 1st winter.	Incompletely ossified.	Grainthorpe Haven, Lincs.	166 mm.
4. i.35.	♂	Imm. to 1st winter.	Incompletely ossified.	Grainthorpe Haven, Lincs.	167 mm.
18. i.34.	♀	Imm. to 1st winter.	Not examined.	Northcotes Fitties, Lincs.	167 mm.
xii.11.	♂	Ad.	Not examined.	Woodbridge, Suffolk.	163 mm.

JAMES M. HARRISON.

[In addition to the examples referred to above I have notes of the following :—One mentioned by Pashley in his *Notes on the Birds of Cley*, with a wing of 165 and bill 45, obtained at Cley, Norfolk, September 9th, 1892, and two others from Cley, male, August 3rd, 1896, wing 169 ; male, September 7th, 1914, wing 163 (Rivière, *Hist. Birds of Norfolk*); three recorded by Dr. C. B. Ticehurst in his *History of the Birds of Suffolk:* a male, February 25th, 1913, with wing 166.5, and two females, January 23rd, 1914, with wings 170 and 166 ; a female in the collection of Mr. R. A. H. Coombes, from Morecambe Bay, Lancs., with a wing of 171 ; one mentioned by Mr. T. H. Harrisson (*Ibis*, 1932, p. 454) from N. Rona, August, 1931, with a wing of 169 ; a female in Col. R. Meinertzhagen's collection from S. Uist, January 5th, 1934, with a wing of 173.5 ; and a second bird ringed in Iceland in July, 1933, which was obtained near Wick, Caithness, October 15th, 1934, this being a female with a wing of 165 and now in the British Museum collection, while a third, recovered in Norfolk, is recorded on p. 363.

It should be mentioned that while the Iceland Redshank tends to be darker than the Common Redshank in winter plumage this is by no means always so. I have recently, for instance, had sent to me a British ringed Redshank in its first winter which is quite as dark as any Iceland winter bird I have been able to compare. It would be very unwise therefore to conclude that a dark looking bird in the field was of the Iceland form, while apparent size would be an equally uncertain guide owing to sexual and individual variation. —H.F.W.]

EARLY BROOD OF COOTS IN CHESHIRE.

On March 3rd, 1935, I saw a pair of Coots (*Fulica a. atra*) accompanied by four young at Rostherne, Cheshire. The young appeared to be about a month old, so that the eggs must have been laid in January or even, perhaps, at the end of December. S. B. Wood.

Chiffchaff Wintering in Lancashire.—Mr. Irvine Whittaker has given us particulars of a Chiffchaff (*Phylloscopus collybita*) which spent the winter in a sheltered wood adjoining the Heywood Sewage Farm. He first saw the bird on November 11th, 1934, and subsequently repeatedly until March 8th, 1935. Mr. Whittaker got close views of the bird and from details he has given us it would appear to have been of the typical form.

Early Blackcaps in Worcestershire.—Mr. P. E. A. Morshead informs us that since writing about the hen Blackcap

(*Sylvia atricapilla*) trapped in his garden at Malvern in February (*antea*, p. 315) he has caught and ringed two male Blackcaps, one on March 8th and the other on the 11th. Mr. Morshead thinks this may point to an early migration rather than wintering. Incidentally he has never seen a Blackcap in his garden before at any time of year.

LETTER.

GREAT CRESTED GREBES AND THE DROUGHT.

To the Editors of BRITISH BIRDS.

SIRS,—A sample count of Great Crested Grebes (*Podiceps c. cristatus*) is to be taken during the coming summer under the auspices of the British Trust for Ornithology.

The main object of the count is to ascertain as far as possible what effect the past two years' drought has had upon the birds. In some places breeding was made impossible through continual alteration of the water level, while other waters almost dried up, and so were unable to support even a non-breeding bird. The threat of continued drought this summer increases the importance of this aspect of the count.

It is also hoped to discover the general trend of numbers and distribution since 1931.

To obtain a representative count, the following areas, in each of which it is hoped to take a complete census, have been chosen: Somerset, Wilts., Berks., Bucks., a circle of twenty miles' radius round London, Oxford, Glamorgan, Leicester, some Norfolk Broads, Cheshire, parts of Yorkshire, and Midlothian. Observers have already undertaken all these areas, but in a number of cases additional helpers would be welcomed.

The main purpose of this notice, however, is to draw the attention of ornithologists generally to the enquiry. It is felt that during the summer many will have opportunities of reporting the absence or presence of Grebes on various waters outside the chosen areas, and the collection of those observations would be a valuable supplement to the census records.

All those, therefore, who expect to find themselves in a position to make such observations are asked to apply to me for a schedule on which to enter them. P. A. D. HOLLOM.

BIRCHFIELD, ADDLESTONE, SURREY.

REVIEW.

"The Winter Starling Roosts of Great Britain, 1932-1933." By B. J. Marples (*The Journal of Animal Ecology*, 3, pp. 187-203, Nov., 1934).

IN the winter of 1932-3 Mr. B. J. Marples endeavoured to obtain information about all the main roosts of Starlings (*Sturnus v. vulgaris*) in Great Britain, and the published results of the enquiry are now before us. Letters to the newspapers, and a wireless appeal, brought in many reports, and, in addition, certain local ornithological societies and individuals undertook to cover particular areas, or counties. Altogether 224 roosts were recorded in England, 22 in Wales and 39 in Scotland. Their approximate positions are shown in a map, which indicates that hardly any of them were situated at altitudes over 600 feet above sea-level, but otherwise seems to show a very irregular distribution. They are also listed in an appendix.

Mr. Marples thinks it unlikely that many large roosts were not reported, except, perhaps, in Scotland. The county in which most roosts were recorded was Cornwall, with 13. The West Riding of Yorkshire had 12, Devon and Sussex 11 each, and Cheshire and Hampshire 10 each. The acknowledgments which the author makes, to those who helped him by surveying definite areas, suggest that most of these counties were covered, and one cannot avoid a suspicion that this may partly account for the numbers recorded. In any case it would surely have been desirable to state which counties were surveyed, so that readers could judge for themselves whether the density recorded in particular counties was perhaps partly dependent on the presence of active ornithologists in them.

Mr. Marples provides diagrams showing the approximate number of roosts per 1,000 square miles in each county and also the number per 1,000 square miles below 600 feet. As he remarks, counties are not very satisfactory units for this purpose, owing to their very unequal sizes. It might have been preferable to use the provinces into which the counties are grouped for botanical purposes, which are more nearly equal in area.

The diagrams indicate that the southern and south-eastern counties of England and the north-western midlands have the highest density of Starling roosts, whilst the lowest densities occur in E. Yorkshire, Lincolnshire, E. Anglia and a belt of counties across the centre of England from the Wash to the Severn. Mr. Marples apparently assumes that the density of the Starling population is indicated by the density of roosts, but it is obvious that this is not necessarily the case. It may be that in areas where roosts are fewer they are also larger, perhaps because suitable roosting places are scarce, whilst where suitable roosting places are plentiful the roosts might tend to be smaller. However, if it is assumed that Starlings are actually most numerous in winter in the areas where roosts are thickest on the ground, comparison with the maps in the Agricultural Atlas of England and Wales suggests that their distribution accords fairly closely with the distribution of dairy cattle and of pigs.

Of 247 roosts as to which reports were received, no less than 107 had been in use for over 10 years. The one on Lundy is known to have existed with only short breaks for 180 years, and the one in the reeds at Slapton Ley, south Devon, for 135 years. The places selected for roosting are of various types, the principal being reeds 52 roosts, conifers 48, deciduous trees 47 and evergreens 37. In many cases roosts in reeds and deciduous trees are only used during the late summer and autumn, the birds moving into conifers or evergreens in the colder months. The damage done to the trees seems to have been exaggerated, reports indicating that the only species which are seriously affected are spruce and Douglas firs. The claim that the foul condition in a roost drives away other birds (especially Pheasants) and foxes from a covert used by Starlings was also not substantiated, as in a large proportion of cases other birds were reported as roosting in the same woods.

Many other interesting details are recorded in this valuable paper, which should certainly be consulted by all students of the habits of birds, and Mr. Marples is to be congratulated on accomplishing an important piece of work. W.B.A.

INDEX.

NOTE.—The nomenclature followed in this volume is in accordance with the "Systematic List" printed at the end of the Volume II. of *A Practical Handbook of British Birds* and reprinted in *A Check-List of British Birds*, and the additions and alterations appearing on pages 101-2 of Volume XXII., pages 24 and 25 of Volume XXIV., pages 8 and 16 of Volume XXVI., pages 2 and 3 of Volume XXVII., and pages 90-96 of Volume XXVIII. of *British Birds*.

aalge, Uria a., see Guillemot, Northern.

ACLAND, Miss C. M., Note on Alpine Swifts in Pembrokeshire, 174.

acuta, Anas, see Pintail.

æsalon, Falco, see Merlin.

alba, Crocethia, see Sanderling.

alba, Tyto a., see Owl, Barn-.

albellus, Mergus, see Smew.

albicilla, Haliæetus a., see Eagle, White-tailed.

albionis, Uria a., see Guillemot, Southern.

ALEXANDER, H. G., Note on Fire-crested Wren in Kent and the bird's call-note, 349.

——, W. B., Letter on Black-headed Gulls nesting in trees at Twigmoor, 152; Notes on Crested Tits in W. Ross-shire, 277; Grey Plovers in Wiltshire, 281.

alexandrinus, Charadrius a., see Plover, Kentish.

ALLEN, E. F., and NAISH, J. M., Note on Raven's Nest with ten eggs, 27.

alpestris, Turdus t., see Ouzel, Alpine Ring-.

alpina, Calidris, see Dunlin.

altifrons, Charadrius a., see Plover, Northern Golden.

anæthetus, Sterna, see Tern, Bridled.

ANDERSON, J. A., Letter on Pintail breeding in Dumbartonshire and hand-reared birds, 246.

anglorum, Regulus r., see Wren, Golden-crested.

anser, Anser, see Goose, Grey Lag-.

antiquorum, Phœnicopterus r., see Flamingo.

apricarius, Charadrius a., see Plover, Golden.

apus, Apus a., see Swift.

arcticus, Colymbus, see Diver, Black-throated.

argentatus, Larus a., see Gull, Herring-.

aristotelis, Phalacrocorax a., see Shag.

ARMITAGE, JOHN, Lapland and other Buntings on the Pennines in winter, 230; Note on Palate Markings of Nestling Sky-Lark (*Plate* 1), 27.

arquata, Numenius a., see Curlew, Common.

arvensis, Alauda, see Lark, Sky-.

ASHMORE, S. E., Time of singing of the Goat-sucker, 259.

ASTLEY, A., Notes on Two Nests of Golden-crested Wrens in one tree, 49; young Swallows assisting in building second nest, 204.

Atlantic, North, Birds seen in, Aug. and Sept., 1934, 269.

atra, Fulica, see Coot.

atricapilla, Sylvia a., see Blackcap.

Auk, Great, The skins and eggs of, 233, 320.

auritus, Podiceps, see Grebe, Slavonian.

Avocet, in Hampshire, 174; at Brooklands Sewage Farm, 343; in Norfolk, 363.

avosetta, Recurvirostra, see Avocet.

BARON, S., Notes on Nest Mortality, 77; on Dartford Warbler in Devonshire, 204.

bassana, Sula, see Gannet.

BAYLIS, Dr. H. A., Parasitological Report on Razorbills infected with intestinal Flukes, 189.

BEDFORD, DUCHESS OF, Note on Dunlin in summer plumage in January, 313.

bensonorum, Carduelis flavirostris, see Twite, Hebridean.

BEST, ALAN T., *see* HUXLEY, PROF. JULIAN S.

bewickii, Cygnus, see Swan, Bewick's.

BIBLE, E. H. T., Note on Ferruginous Duck in Merionethshire, 207.

Birds laying while still attending brood, 151, 182.

Bittern, Little, in Sussex, 206.

Blackbird, Nest with seven eggs, 29; Utilizing discarded nest, 50; Strange nest-building by wounded, 79; Movements of ringed, to and from abroad, 110; Recovery of marked, 44, 239; Song of, 365.

Blackcap, in February and March, in Worcestershire, 315, 372;

Bluethroat, White-spotted, in Norfolk, 360.

Boase, Henry, On the Display, Nesting and Habits of the Sheld-Duck, 218.

Bolam, George, Notice of death of, 214.

Boyd, A. W., A Fly parasitic on the Swallow, 225; Notes on Black-headed Gulls nesting in trees, 115; Notes from Altrincham Sewage Farm, Cheshire, 343; from Staffordshire Reservoirs, 345; Notes on the Tree-Sparrow, 1934, 347.

brachyrhynchus, Anser, see Goose, Pink-footed.

Brambling, Movements of ringed, to abroad, 110, 243; Recovery of marked, 238; Breeding range of, 243.

britannica, Carduelis c., see Goldfinch, British.

britannicus, Lyrurus t., see Grouse, Black.

——, *Parus a.*, see Titmouse, Coal-.

British List, Additions and Alterations to the, 90.

British Trust for Ornithology, Notes on The, 75.

Brown, George, Note on Black-throated Diver in Berkshire, 370.

——, R. H., The Food of certain Birds of Prey, 257; Note on Incubation- and Fledging-Periods of Wren, 204; Letter on the Grassholm Gannets, 214.

——, Robert L., Note on some breeding-habits of Kingfishers, 83.

Bryson, Derek, *see* Serle, William.

Bunting, Corn-, Breeding-Habits, 2, 154; Polygamous Habit, 2; Early nesting of, in Skye, 87; Differences in the breeding-habits of Sussex and Cornish, 119.

Bunting, Lapland, on Pennines in winter, 230.

——, Little, in Fife, 212.

——, Reed-, Recovery of marked, 42; on Pennines in winter, 230.

——, Snow, Inland in Kent, 142; Inland in Essex, 212; Inland in Essex, correction to, 283; on Pennines in winter, 230.

——, Yellow, Recovery of marked, 42.

Burkitt, J. P., Notes on the Rook, 322; Fluctuations in song of Song-Thrush, Blackbird and Chaffinch, 364.

Burne, H. J. K., Note on Spotted Flycatcher laying three times in one nest, 203.

buteo, Buteo b., see Buzzard, Common.

Buzzard, Common, Brood of five, 52; in Lancashire, 86; Food of, 258; in Outer Hebrides, 315.

——, Rough-legged, Unrecorded specimen from Kent, 147.

Cadman, W. A., An attacking Tawny Owl, 130.

calandra, Emberiza c., see Bunting, Corn-.

Campbell, Dr. J. W., Notes on an unrecorded Essex Heronry, 52; Continental Jay and Scandinavian Lesser Black-backed Gull in Essex, 276.

canadensis, Branta c., see Goose, Canada.

cannabina, Carduelis c., see Linnet.

canorus, Cuculus, see Cuckoo.

canus, Larus c., see Gull, Common.

canutus, Calidris c., see Knot.

carbo, Phalacrocorax c., see Cormorant.

Carter, G. N., Letter on the Skins and Eggs of the Great Aug, 320.

Chaffinch, Recovery of marked, 41, 237; Nesting in disused Swallow's nest, 49; Movements of ringed, to and from abroad, 110; Song of, 366.

Chiffchaff, a triangle, 142; in Northumberland in November, 244; wintering in Lancs., 372.

chloris, Chloris ch., see Greenfinch.

chloropus, Gallinula ch., see Moor-Hen.

cinerea, Ardea c., see Heron, Common.

——, *Motacilla c.*, see Wagtail, Grey.

citrinella, Emberiza, see Bunting, Yellow.

Clancey, Philip A., On the Habits of Kingfishers, 295; Note on Water-weed in Kingfisher castings, 174.

clanga, Aquila, see Eagle, Spotted.

clangula, Bucephala c., see Golden-eye.

clarkei, Turdus ph., see Thrush, Song-.

clypeata, Spatula, see Shoveler.

coburni, Turdus m., see Redwing, Iceland.

cœlebs, Fringilla c., see Chaffinch.

Cohen, Edwin, Notes on Hobby in Cheshire, 85; Bewick's Swan in Anglesey, 280.

collurio, Lanius c., see Shrike, Red-backed.

collybita, Phylloscopus c., see Chiff-chaff.

comminutus, Dryobates m., see Woodpecker, Lesser Spotted.

Congress, The VIIIth International Ornithological, 73.

Congreve, Major W. M., Notes on large brood of Alpine Ring-Ouzels, 81; the Clutch of the Golden Oriole, 78.

Coot, Recovery of marked, 268; Early brood in Cheshire, 372.

Cormorant, Recovery of marked, 69, 262; Movements of ringed, to and from abroad, 136; at Staffordshire Reservoirs, 346.

cornix, Corvus c., see Crow, Hooded.

corone, Corvus, see Crow, Carrion-.

coturnix, Coturnix, see Quail.

Courser, Cream-coloured, in Norfolk, 242.

crecca, Anas, see Teal.

crex, Crex, see Rail, Land-.

cristatus, Podiceps c., see Grebe, Great Crested.

Crow, Carrion-, Recovery of marked, 36.

Crow, Hooded, at Altrincham Sewage Farm, 343.

Crowe, Geoffrey, Note on Woodchat seen in Sussex, 50.

Cuckoo, Movements of ringed, to abroad, 112; Calling in Devon in October, 309.

Curlew, Recovery of marked, 71, 266; Movements of ringed, from abroad, 139.

——, Stone-, Movements of ringed, to abroad, 137; Recovery of marked, 263.

cursor, Cursorius, see Courser, Cream-coloured.

cyanecula, Luscinia s., see Blue-throat, White-spotted.

cyaneus, Circus c., see Harrier, Hen-.

dartfordiensis, Sylvia u., see Warbler, Dartford.

Davis, H. H., Note on Rose-coloured Starling at Lundy, 49.

——, ——, and Tetley, H., Note on Waders in the Bristol District, 1933-1934, 281.

Dipper, Breeding in Hoy, Orkney, 283; Distribution and number of, on the N. and S. Esks, Midlothian, 327.

——, Irish form of, in Arran, 96.

Diver, Black-throated, in Berkshire, 370.

——, Red-throated, in Inner London, 292.

domesticus, Passer d., see Sparrow, House-.

Dotterel, in Hampshire, 175.

Dove, Stock-, Recovery of marked, 70, 265; Movements of ringed, to abroad, 136.

——, Turtle-, Recovery of marked, 70, 265.

Duck, Ferruginous, in Norfolk, 31, 53; in Merionethshire, 207.

——, Long-tailed, in Hampshire, 241; in Sussex, 316; in Norfolk, 316.

——, Scaup, Movements of ringed, from abroad, 136.

——, Sheld-, nesting in straw-stack, 148; Display, Nesting and Habits, 218; at Brooklands, 342; at Altrincham, 343; at Staffs. Reservoirs, 345.

——, Tufted, Recovery of marked, 69, 262; Movements of ringed from abroad, 136.

Duncan, A. B., *see* McWilliam, Rev. J. M.

Dunlin, in summer plumage in January, 313.

Eagle, Spotted, probably in Norfolk, 360.
——, White-tailed, in Norfolk, 361.
EDWARDS, HENRY H., Note on Cream-coloured Courser in Norfolk, 242.
EGGELING, W. J., Notes on Song-Thrush alighting on sea and killed by Lesser Black-backed Gull, 28 ; Chaffinch nesting in disused Swallow's nest, 49 ; Whinchat's early nesting and building again while feeding young, 144.
Eider, Common, in Norfolk, 316.
EMMET, REV. HOWARD J., Notes on Swallow clutches and broods, 146 ; Sheld-Duck nesting in straw-stack, 148.
ENGLISH, R. D., Note on Blackbird using discarded nest, 50.
ericetorum, Turdus e., see Thrush, British Song-.
erythropus, Tringa, see Redshank, Spotted.
europæus, Caprimulgus e., see Nightjar.
excubitor, Lanius, see Shrike, Great Grey.

faeroeensis, Capella g., see Snipe, Færoe.
falcinellus, Limicola f., see Sandpiper, Broad-billed.
Falcon, Peregrine, Food of, 257.
ferina, Nyroca, see Pochard, Common.
Firecrest, in Hampshire, 28.
Flamingo in Norfolk, 362.
flammeus, Asio f., see Owl, Short-eared.
flava, Eremophila a., see Lark, Shore-.
——, *Motacilla f.*, see Wagtail, Blue-headed.
Flycatcher, Pied, Recovery of marked, 43, 238 ; Nesting in Perthshire, 87 ; Breeding in Lanarkshire, 315.
——, Red-breasted, in Forth area, 282.
——, Spotted, Parents protecting nestlings from heat of sun, 142 ; Laying three times in one nest, 203 ; Using same nest and rearing young Cuckoo, 349.
FOLEY, H. T. H., Note on Red-breasted Goose in Pembrokeshire, 311.
Food of certain Birds-of-Prey, 257.
——, and Territory, 285, 287.
Forth Area, Scarce birds in, 282.
frugilegus, Corvus f., see Rook.
fulicarius, Phalaropus, see Phalarope, Grey.
fuligula, Nyroca, see Duck, Tufted.
fusca, Oidemia f., see Scoter, Velvet-.
fuscus, Larus f., see Gull, Scandinavian Lesser Black-backed.

Gadwall, Movements of ringed, from abroad, 134.
gallinago, Capella g., see Snipe, Common.
Gannet, Recovery of marked, 69, 263 ; Colonies of Iceland, 100, 183, 319 ; Movements of ringed, to abroad, 136 ; Grassholm, Letter on the, 214 ; in North Atlantic, 274 ; in Nottingham, 284 ; in Middlesex, 312.
GARDINER, MISS PHYLLIS, Note on Strange Nest-building by wounded Blackbird, 79.
Garganey, Breeding in Cambridgeshire, 32 ; in Lancashire, 86 ; Nesting in Kent, 212 ; at Staffordshire Reservoirs, 345 ; Scarcity in Norfolk, 362.
GARNETT, RONALD M., Note on Fire-crested Wren in Norfolk, 310.
gibraltariensis, Phœnicurus o., see Redstart, Black.
glacialis, Fulmarus g., see Petrel, Fulmar.
glandarius, Garrulus g., see Jay, Continental.
glareola, Tringa, see Sandpiper, Wood-.
GLEGG, WILLIAM E., Letter on Essex Heronries, 120 ; Note on Red-breasted Mergansers in Middlesex, 349.
Goatsucker, see Nightjar.
GODDARD, T. RUSSELL, Notes on Colour Variation and Habits of Short-eared Owl, 290.
Godwit, Bar-tailed, at Altrincham Sewage Farm, 344.

Godwit, Black-tailed, in South Devon, 119; in Cheshire, 175; in Cornwall, 175; in Gloucestershire, 282; in Somerset, 282; in Devon, 309; at Brookland's Sewage Farm, 343; at Altrincham Sewage Farm, 344; in Norfolk, 363.

Goldeneye, in Inner London, 292; at Staffordshire Reservoirs, 346.

Goldfinch, Recovery of marked, 41.

Gooch, G. B., Note on Oyster-catchers' method of removing Limpets, 351.

Goosander, at Staffordshire Reservoirs, 346.

Goose, Canada, at Altrincham Sewage Farm, 343.

——, Grey Lag-, Movements of ringed, from abroad, 134.

——, Pink-footed, On, 368.

——, Red-breasted, in Pembrokeshire, 311.

grabæ, Fratercula a., see Puffin.

graellsii, Larus f., see Gull, British Lesser Black-backed.

gravis, Puffinus, see Shearwater, Great.

Grebe, Black-necked, Status of colony in Forth area, 207; at Staffordshire Reservoirs, 346.

——, Great Crested, Territory in the, 191, 246; at the Tring Reservoirs, 250; Territory and Food, 287; at Staffordshire Reservoirs, 346; and drought, 373.

——, Slavonian, in Inner London, 241, 292.

Greenfinch, Recovery of marked, 39, 237; A "Homing" Experiment, 276.

Greenshank, Incubation-period of, 210; in Somerset, 282; at Brookland's Sewage Farm, 342; at Altrincham Sewage Farm, 344; at Staffordshire Reservoirs, 346.

griseus, Puffinus, see Shearwater, Sooty.

Grouse, Black, Food of, 316.

Guillemot, Northern, in Inner London, 34.

——, Southern, Recovery of marked, 268.

——, Tameness of a, 314.

gularis, Cinclus c., see Dipper.

Gull, Black-headed, Breeding in Cambridgeshire, 32; Nesting in trees, 115, 152; Movements of ringed from abroad, 140; Nesting in trees in Sutherland, 244.

——, Common, Recovery of marked, 72, 267; Movements of ringed, from abroad, 140.

——, Glaucous, in Cornwall, 29.

——, Great Black-backed, Recovery of marked, 72; Movements of ringed, to abroad, 141; at Altrincham Sewage Farm, 245.

——, Herring-, Movements of ringed, from abroad, 141; Recovery of marked, 267.

——, Iceland, in Hampshire, 29; in Dorset, 29; Plumage changes, 199; in Inverness-shire, 244; in Renfrewshire, 244; in Edinburgh, 245; in Devon, 309.

——, Lesser Black-backed, Recovery of marked, 72, 268; Movements of ringed, to abroad, 141; at Altrincham Sewage Farm, 345.

——, Little, in Essex, 175; in Norfolk, 363.

——, Scandinavian Lesser Black-backed Gull in Somerset and Gloucestershire, 117; in Devon, 176, 309; in Essex, 276; in Inner London, 294.

Gullery, Dates of Laying in a, 55.

Haigh, G. H. Caton, Note on Pink-footed Geese, 368.

haliætus, Pandion, see Osprey.

Hardy, Eric, Note on Scarce Birds in Lancashire, 86.

Harrier, Hen-, in Sussex, 315; in Norfolk, 361.

——, Montagu's, Recovery of Marked, 261; in Oxfordshire, 279.

Harrison, Dr. James M., Notes on Snow-Buntings from inland in Kent, 142; an unrecorded Rough-legged Buzzard from Kent, 147; Buff-breasted Sandpiper in Sussex, 148; Spotted Redshanks and Temminck's Stint in Lincolnshire, 149; Iceland Redshank in British Islands, 370.

Harthan, A. J., Note on A Census of Nightingales in S. Worcestershire, 50.
Hartley, P. H. Trahair, Note on Apparent Polygamy of the Willow-Warbler, 78.
Hawk, Sparrow-, Food of, 258 ; Recovery of marked, 261.
hebridensis, Turdus e., see Thrush, Hebridean Song-.
hebridium, Prunella m., see Sparrow, Hebridean Hedge-.
Heron, Common, Recovery of marked, 68, 262 ; Movements of ringed, to and from abroad, 133 ; Food of, 258 ; Index of Population, 332.
Heronries, Essex, 120.
Heronry, Unrecorded, from Essex, 52, 88.
hiaticula, Charadrius h., see Plover, Ringed.
hibernicus, Cinclus c., see Dipper, Irish.
——, *Prunella m.*, see Sparrow, Irish Hedge-.
Higgins, Rodney H., Note on late passage of Swifts in Sussex, 279.
hirundo, Sterna h., see Tern, Common.
hispanica, Œnanthe, see Wheatear, Black-eared.
Hobby, Breeding in Cambridgeshire, 32 ; in Cheshire, 85 ; in Breconshire, 205 ; in Norfolk, 360.
Hollom, P. A. D., Notes on a Census of Nightingales in N.W. Surrey, 81 ; Late passage of Swifts in Sussex, 204 ; Brooklands Sewage Farm, Surrey, 342 ; Letter on Great Crested Grebes and the Drought, 373.
Holmes, P. F., and Keith, D. B., Letter on the Gannet Colony of Grimsey, North Iceland, 319.
Howard, Eliot, Letter on Territory and Food, 285.
Hurrell, H. G., Note on a Chiffchaff triangle, 142.
Huxley, Professor Julian S., and Best, Alan T., A Census of Water-Birds on the Highgate and Kenwood Ponds, 129 ; Letter on, 288.
hyemalis, Clangula, see Duck, Long-tailed.
hyperboreus, Larus, see Gull, Glaucous.
hypoleuca, Muscicapa h., see Flycatcher, Pied.
hypoleucos, Tringa, see Sandpiper, Common.

ignicapillus, Regulus i., see Wren, Fire-crested.
impennis, Alca, see Auk, Great.
Incubation- and Fledging-Periods of Wren, 204.
Incubation-period of Greenshank, 210.
Ingram, Mervyn J., Note on Little Bittern seen in Devonshire, 53.
interpres, Arenaria i., see Turnstone.
ispida, Alcedo a., see Kingfisher.

Jackdaw, Recovery of marked, 36, 235 ; Movements of ringed, to abroad, 106.
——, Scandinavian, Addition to the British List, 90.
Jay, Continental, in Essex, 276.
Jourdain, Rev. F. C. R., The Skins and Eggs of the Great Auk, 233 ; Notes on the Clutch of the Golden Oriole, 78 ; Song-Thrush attacking Lizard, 113 ; Black-headed Gulls nesting in trees, 152 ; Second broods of Titmice, 203 ; Land-Rail in winter in Hants., 314.

Keith, D. B., *see* Holmes, P. F.
Kenrick, W. E., Note on Greenfinch " Homing ", 276.
Kestrel, Food of, 258 ; Recovery of marked, 261.
Keywood, K. P., Note on Little Bittern in Sussex, 206.
Kingfisher, Recovery of marked, 67, 261 ; Breeding-habits, 83 ; Water-weed in castings of, 174 ; Habits of, 295.
Kittiwake, Recovery of marked, 72, 268 ; Movements of ringed, to abroad, 141 ; in North Atlantic, 275.
kleinschmidti, Parus a., see Titmouse, British Willow-.
Knot, in Gloucestershire, 282.
Knowles, Richard E., Note on Quail breeding in Merionethshire, 315.

LACK, DAVID, Note on Birds on Lundy, 77; Letter on Territory and Food, with special reference to the Great Crested Grebe, 287.
——, ——, see VENABLES, L. S. V.
lagopus, Buteo, see Buzzard, Rough-legged.
Lancashire, Scarce birds in, 86.
LANCUM, F. HOWARD, Letter on Merlins breeding on Dartmoor, 120.
lapponica, Limosa, see Godwit, Bar-tailed.
lapponicus, Calcarius, see Bunting, Lapland.
Lapwing, Recovery of marked, 70, 265; Movements of ringed, to and from abroad, 137; Emigration in winter, 1933-34, 208; at Staffordshire Reservoirs, 346.
Lark, Shore-, in Forth area, 282.
——, Sky-, Palate markings of nestling, 27; Recovery of marked, 42.
LEACH, MISS E. P., *see* WITHERBY, H. F.
leucopterus, Chlidonias, see Tern, White-winged.
——, *Larus*, see Gull, Iceland.
leucorodia, Platalea l., see Spoonbill.
leucorrhoa, Oceanodroma l., see Petrel, Leach's.
——, *Œnanthe*, see Wheatear, Greenland.
LEVETT, Miss M. J., Note on Fulmar Petrels ejecting oil when undisturbed, 312.
LEWIS, STANLEY, Notes on brood of five Common Buzzards, 52; Spotted Flycatchers protecting nestlings from heat of sun, 142; Mortality among nestling Lesser Spotted Woodpeckers, 147; Letter on Birds laying while still attending brood from previous clutch, 182.
limosa, Limosa, see Godwit, Black-tailed.
Linnet, Recovery of marked, 41; Movements of ringed, to abroad, 109.
LLOYD, BERTRAM, Notes on late passage of Swifts to Ireland, 172; Diving of Shoveler, 206.
lobatus, Phalaropus, see Phalarope, Red-necked.
LOCKLEY, R. M., Note on Water-Pipits in Pembrokeshire, 310.
LOCKLEY, R. M., and SALMON, H. MORREY, Letter on The Gannet Colonies of Iceland, 183.
London, Inner, Birds of, 34, 292.
LOVENSKIOLD, DR. HERMAN L., Note on extension southward of Temminck's Stints breeding-range in Norway, 148.
LOW, Dr. G. CARMICHAEL, The Races of the Ringed Plover, 64.
——, ——, *see* PEDLER, E. G.
LOWE, Dr. PERCY R., On a flock of Razorbills in Middlesex found to be infested with intestinal Flukes, 188, 245.
Lundy Island, Note on Birds of, 77.

MACPHERSON, A. HOLTE, Birds of Inner London, 1933, 34; 1934, 292.
macrura, Sterna, see Tern, Arctic.
MCWILLIAM, REV. J. M., and DUNCAN, A. B., Colour of the Bill of the Hebridean Twite in Nesting-season, 170.
MADOC, G. C., Notes on the breeding-habits of Bridled Tern, 93.
Mallard, Recovery of marked, 68, 262; Movements of ringed, to and from abroad, 134.
MANN, E., Note on possible Black-eared Wheatear seen in Pembrokeshire, 81.
——, ——, PETHEN, R. W., and WRIGHT, W. W., Note on Razorbill inland in Essex, 313.
marila, Nyroca m., see Duck, Scaup-.
marinus, Larus, see Gull, Great Black-backed.
maritima, Calidris m., see Sandpiper, Purple.
Marked Birds, Recovery of, 36, 67, 235.
Marking Scheme, The "British Birds", Progress for 1934, 302.
MARPLES, GEORGE, Notes on Great Tit hatching Blue Tit's eggs, 113; Number of feathers in nests of House-Sparrow and Wren, 309; Parasite on Robin and Great Tit, 311.
MARTIN, REV. CYRIL E., Note on Spotted Flycatchers using same nest and rearing Cuckoo, 349.
Martin, House-, Recovery of marked, 240; Ectoparasites of, an appeal, 278.

Martin, Sand-, at Altrincham Sewage Farm, 343.

Mayall, A., Note on Numbers and Destruction of Broods of Nightingales in Suffolk, 145.

Mayr, Dr. Ernst, Letter on Blackcap in Atlantic in June, 119.

Meares, D. H., Letter on differences in the breeding-habits of Sussex and Cornish Corn-Buntings, 119.

media, *Capella*, see Snipe, Great.

megarhyncha, *Luscinia m.*, see Nightingale.

melba, *Apus*, see Swift, Alpine.

melophilus, *Erithacus r.*, see Robin, British.

merganser, *Mergus m.*, see Goosander.

Merganser, Red-breasted, in Middlesex, 350.

Merlin, Breeding on Dartmoor, Devon, 87, 129; Food of, 258; Recovery of marked, 261.

merula, *Turdus m.*, see Blackbird.

minimus, *Limnocryptes*, see Snipe, Jack.

minuta, *Calidris*, see Stint, Little.

minutus, *Ixobrychus*, see Bittern, Little.

minutus, *Larus*, see Gull, Little.

monedula, *Colœus m.*, see Jackdaw, Scandinavian.

montanus, *Passer m.*, see Sparrow, Tree-.

montifringilla, *Fringilla*, see Brambling.

Moorhen, Two laying in same Nest, 56; Recovery of marked, 72, 268; Movements of ringed, from abroad, 141.

morinellus, *Charadrius*, see Dotterel.

Musselwhite, D. W., Letter on Birds laying while still attending brood from previous clutch, 151.

Naish, J. M., *see* Allen, E. F.

nebularia, *Tringa*, see Greenshank.

Nest Mortality, Note on, 77.

newtoni, *Parus m.*, see Titmouse, Great.

Nicholson, E. M., An Index of Heron Population, 332; Letters on an unrecorded Essex Hèronry, 88; Territory in the Great Crested Grebe, 246; Review of *Quest for Birds*, 214.

niger, *Chlidonias n.*, see Tern, Black.

Nightingale, Census of, in S. Worcestershire, 50; in N.W. Surrey, 81; Census of, in Gloucestershire, 82; Numbers and destruction of broods in Suffolk, 145.

Nightjar, Time of singing of, 259.

nigricollis, *Podiceps n.*, see Grebe, Black-necked.

nisus, *Accipiter*, see Hawk, Sparrow-.

nivalis, *Plectrophenax*, see Bunting, Snow-.

Norfolk, Ornithological Report for, for 1934, 354.

nyroca, *Nyroca*, see Duck, Ferruginous.

obscurus, *Parus c.*, see Titmouse, Blue.

occidentalis, *Prunella m.*, see Sparrow, Hedge-.

——, *Hæmatopus o.*, see Oystercatcher.

ochropus, *Tringa*, see Sandpiper, Green.

œdicnemus, *Burhinus*, see Curlew, Stone-.

œnanthe, *Œnanthe œ.*, see Wheatear.

œnas, *Columba*, see Dove, Stock-.

Oldham, Chas., Great Crested Grebes at the Tring Reservoirs, 250; Note on Glaucous Gull in Cornwall, 29.

Oriole, Golden, the Clutch of the, 78.

oriolus, *Oriolus o.*, see Oriole, Golden.

Ornithological Congress, Note on the VIII. International, 73.

Osmaston, B. B., Note on Robin with four broods, 113.

Osprey, in Yorkshire, 175; in Huntingdonshire, 175; in Radnorshire, 205; in Forth area, 282; in Norfolk, 361.

ostralegus, *Hæmatopus*, see Oystercatcher.

otus, *Asio o.*, see Owl, Long-eared.

Ouzel, Alpine Ring-., Large brood of, 81.

——, Ring-, in Westmorland in winter, 352.

Owl, Barn-, Recovery of marked, 67; Food of, 257.

——, Little, Recovery of marked, 67; Nest under Railway, 84.

Owl, Long-eared, Breeding in Isle of Man, 30; Movements of ringed, from abroad, 112.
——, Short-eared, Recovery of marked, 261; Colour variation and Habits, 290; in Norfolk, 360.
——, Tawny, an attacking, 130; eating Newts, 205; Food of, 257; Recovery of marked, 261; in Outer Hebrides, 315.
Oyster - Catcher, Recovery of marked, 70; probably in North Atlantic, 275; method of removing Limpets, 351.

palumbus, Columba, see Pigeon, Wood-.
parasiticus, Stercorarius, see Skua, Arctic.
parva, Muscicapa, see Flycatcher, Red-breasted.
PEDLER, E. G., and LOW, DR. G. CARMICHAEL, Note on Slavonian Grebe in Inner London, 241.
pelagicus, Hydrobates, see Petrel, Storm-.
penelope, Anas, see Wigeon.
peregrinus, Falco p., see Falcon, Peregrine.
PETHEN, R. W., *see* MANN, E.
Petrel, Fulmar, Investigation (1934), 182; in North Atlantic, 275; Ejecting oil when undisturbed, 312.
——, Leach's Fork-tailed, in North Atlantic, 274; Recorded nesting of, in Orkney, 284; in Carmarthenshire, 311; Status of in North Rona, Sula Sgeir and Flannan Islands, 316.
——, Storm-, Recovery of marked, 264.
Phalarope, Grey, in Sussex, 244; in Leicestershire, 244; in Somerset, 244; in Devon, 309; at Altrincham Sewage Farm, 344.
——, Red-necked, in Isle of Man, 31; in Cardiganshire, 211; in Norfolk, 363.
philomelus, Turdus e., see Thrush, Continental Song-.
Pigeon, Wood-, Recovery of marked, 69, 265; Movements of ringed, to abroad, 136.
Pintail, Recovery of marked, 69; Movements of ringed, to abroad, 135; Breeding in Dumbartonshire, 206, 246; in Middlesex, 280.
Pipit, Alpine, in Cambridgeshire, 32; in Pembrokeshire, 310.
——, Meadow-, Recovery of marked, 42, 238.
——, Rock-, Large migration in Norfolk, 359.
platyrhyncha, Anas p., see Mallard.
Plover, Arctic Ringed, Addition to the British List, 91; in Hertfordshire, 175.
——, Grey, in Hertfordshire, 213; in Wiltshire, 281; in Gloucestershire, 281; at Altrincham Sewage Farm, 343.
——, Kentish, in Dorset and Hampshire, 53.
——, Northern Golden, in Outer Hebrides, 315.
——, Ringed, Races of, 64; Recovery of marked, 70; Double brood, 86.
Pochard, at Staffordshire Reservoirs, 345.
——, "Paget's", in Norfolk, 53.
pomarinus, Stercorarius, see Skua, Pomatorhine.
PORTAL, M., Note on Long-tailed Duck in Hampshire, 241.
POUNDS, HUBERT E., Note on Coal-Tit's double brood, 203.
POWELL, T. G., Note on Ringed Plover's double brood, 86.
pratensis, Anthus, see Pipit, Meadow-.
PRICE, M. PHILIPS, Note on a Census of Nightingales in Gloucestershire, 82.
Puffin, in Surrey, 213; Recovery of marked, 268; in Berkshire, 284.
puffinus, Puffinus p., see Shearwater, Manx.
pugnax, Philomachus, see Ruff.
pusilla, Emberiza, see Bunting, Little.
pygargus, Circus, see Harrier, Montagu's.

Quail, Nesting in Kent, 213; Observed in Hampshire, 213; Breeding in Merionethshire, 315.
querquedula, Anas, see Teal.

Rail, Land-, in winter in Hampshire, 314.
Raven, Nest with ten eggs, 27.
rayi, Motacilla f., see Wagtail, Yellow.
Razorbill, Recovery of marked, 72, 268 ; Movements of ringed, to abroad, 141 ; Flock of, infested with intestinal Flukes, 188, 245 ; Inland in Essex, 284, 313.
Recovery of Marked Birds, 36, 67, 235.
Redbreast, see Robin.
Redpoll, Greenland, probably in North Atlantic, 274.
Redshank, Movements of ringed, to abroad, 139 ; Recovery of Marked, 266 ; Wintering in Somerset, 351.
——, Iceland, occurrences in British Isles, 370.
——, Spotted, in Lincolnshire, 149 ; in Sussex in spring, 150 ; at Altrincham Sewage Farm, 344.
Redstart, Black, at Brookland's Sewage Farm, 342.
Redwing, Iceland, in Kent, 30 ; in S. Uist, 96.
Reservoirs, see Sewage Farms.
Reviews :—
  Bird-Life in the Isle of Man, 31.
  Transactions of the Norfolk and Norwich Naturalist Society for 1932-33, 31.
  Report of the Cambridge Bird Club, 1933, 32.
  Transactions of the Carlisle Natural History Society, 1933, 32.
  Journal of the Derbyshire Archæological and Natural History Society, 1933, 32.
  Report of the Marlborough College Natural History Society for 1933, 32.
  The Role of Environment in the Life of Birds, 176.
  Sea Terns or Sea Swallows, their Habits, Language, Arrival and Departure, 178.
  Habitat Selection in Birds, 179.
  The Birds of Cambridgeshire, 181.
  Quest for Birds, The Problems and Pleasures of an English Bird-Watcher, 214.
Reviews (*cont.*) :—
  Scolt Head Island, 216.
  Birds of Great Britain and their Natural History, 245.
  Birds in Britain to-day, 316.
  The London Naturalist, 1933, 317.
  Report of the Oxford Ornithological Society on the Birds of Oxfordshire, Berkshire and Buckinghamshire, 1933, 318.
  Report on the Birds of Wiltshire for 1933, 318.
  Report of the Sanctuary Club, 1932, 1933, 1934, 318.
  The winter Starling Roosts of Great Britain, 1932-1933, 373.
RICKMAN, PHILIP, Note on Pintail breeding in Dumbartonshire, 206, 246.
ridibundus, Larus, see Gull, Black-headed.
Ringed Birds, see Marked Birds ; Movements of, from abroad to the British Islands and from the British Islands to abroad, Addenda iii., 106, 133.
Ringers, Notice to, 150.
RINGROSE, BERNARD J., Note on Avocets in Hampshire, 174.
riparia, Riparia r., see Martin, Sand-.
RIVIERE, B. B., Note on "Paget's Pochard" and Ferruginous Duck in Norfolk, 53 ; Ornithological Report for Norfolk for 1934, 354.
ROBERTS, BRIAN, The Gannet Colonies of Iceland, 100.
Robin, Recovery of marked, 46, 239 ; Movements of ringed, to abroad, 111 ; with four broods, 113 ; Parasite on, 311.
ROBINSON, H. W., Notes on Dates of Laying in a Gullery, 55 ; Large clutches of eggs in Terns, 150 ; Mortality among young Common Terns in Lancs., 211.
robusta, Tringa t., see Redshank, Iceland.
ROEBUCK, A., Note on Blackbird's nest with seven eggs, 29.

Rook, Recovery of marked, 36, 235; Movements of ringed, from abroad, 106; Notes on the, 322.

ROOKE, K. B., Notes on Firecrest in Hampshire, 28; Iceland Gull in Hampshire and Dorset, 29; Kentish Plovers in Dorset and Hampshire, 53; Birds seen in the North Atlantic, 269.

, ——, and SMITH, K. D., Scandinavian Lesser Black-backed Gull in Somerset and Gloucestershire, 117.

roseus, Pastor, see Starling, Rose-coloured.

ROSS, MISS WINIFRED M., Note on Incubation of Greenshank, 210; Excavation of Nesting-hole and Incubation of Crested Tit, 226.

rostrata, Carduelis f., see Redpoll, Greenland.

rubetra, Saxicola r., see Whinchat.

Ruff, in Lancashire, 86; in Somerset, 282; in Devon, 309; in winter in Cambridgeshire, 316; at Brooklands Sewage Farm, 342; at Altrincham Sewage Farm, 344; at Staffordshire Reservoirs, 346.

ruficollis, Branta, see Goose, Red-breasted.

rustica, Hirundo r., see Swallow.

rusticola, Scolopax, see Woodcock.

RYVES, LIEUT.-COL., and MRS. B. H., The Breeding-Habits of the Corn-Bunting as observed in North Cornwall: with special reference to its polygamous habit, 2; Supplementary notes, 154.

SALMON, H. MORREY, *see* LOCKLEY, R. M.

Sanderling, in Gloucestershire, 281; at Staffordshire Reservoirs, 346.

Sandpiper, Broad-billed, seen in Sussex, 209.

——, Buff-breasted, in Sussex, 148.

——, Common, in Devon in November, 309.

——, Curlew-, in Gloucestershire, 282; at Brookland's Sewage Farm, 342; at Altrincham Sewage Farm, 344.

Sandpiper, Green, in Somerset, 282; at Brookland's Sewage Farm, 342; at Altrincham Sewage Farm, 344; in Somerset in summer, 351.

——, Purple, in Gloucestershire, 282.

——, Wood-, in East Lothian, 210; at Brookland's Sewage Farm, 342; at Altrincham Sewage Farm, 344.

sandvicensis, Sterna s., see Tern, Sandwich.

Scaup, see Duck, Scaup-.

schœniclus, Emberiza s., see Bunting, Reed-.

Scoter, Velvet-, in Derbyshire, 32; at Staffordshire Reservoirs, 346.

scoticus, Parus c., see Titmouse, Crested.

senator, Lanius, see Shrike, Wood-chat.

serrator, Mergus, see Merganser, Red-breasted.

SERLE, WILLIAM (Junior), Notes on Status of Black-necked Grebe Colony in Forth area, 207; Wood-Sandpiper in East Lothian, 210.

, ——, and BRYSON, DEREK, Distribution and number of the Dipper on the N. and S. Esks (Midlothian), 327.

SETH-SMITH, D., Notes on Jack Snipe in Inner London, 29; Gannet in Middlesex, 312.

Sewage Farms and Reservoirs, Notes from Brooklands, Surrey, 342; Altrincham, Cheshire, 343; Staffordshire, 345.

Shag, Recovery of marked, 69, 236; Movements of ringed, to abroad, 136; inland in Kent, 151; in Essex, 313; in Middlesex, 313; in Hertfordshire, 313; in Surrey, 313.

Shearwater, Great, in North Atlantic, 275.

——, Manx, Movements of ringed, to abroad, 136; Recovery of marked, 264; in North Atlantic, 275.

——, Sooty, in North Atlantic, 275.

Sheld-Duck, see Duck, Sheld-.

SHIPTON, WILLIAM, Note on Great Skua in Derbyshire, 212.

Shoveler, Diving of, 206, 241; at Brookland's Sewage Farm, 342; at Altrincham Sewage Farm, 343; at Staffordshire Reservoirs, 345.
Shrike, Great Grey, in Surrey, 352.
——, Red-backed, Probable nesting in Midlothian, 243.
Siskin, Movements of ringed, from abroad, 106.
Skua, Arctic, Breeding on Noss, Shetland, 87; in Berks., 242.
——, Great, Breeding on Noss, Shetland, 87; in Derbyshire, 212; in North Atlantic, 275; in Yorkshire, 352.
——, Long-tailed, in North Atlantic, 275.
——, Pomatorhine, in flight, 118; in North Atlantic, 275.
skua, Stercorarius s., see Skua, Great.
Skuas, Census of breeding, on Noss, Shetland, 87.
Smallcombe, W. A., Note on Tawny Owl eating Newts, 205.
Smew, at Staffordshire Reservior, 346.
Smith, K. D., Notes on Birds in Devon, 309; Little Stint and Spotted Redshank wintering; and Green Sandpiper in summer in Somerset, 351.
——, ——, *see* Rooke, K. B.
——, W. Hastings, Note on Red-necked Phalarope in Cardiganshire, 211.
Snipe, Recovery of marked, 266.
——, Faeroe, in Kent, 30; Movements of ringed, from abroad, 139.
——, Great, in Hampshire, 244.
——, Jack, in Inner London, 29.
Song, Fluctuations in, of Song-Thrush, Blackbird and Chaffinch, 364.
Sparrow, Hebridean Hedge-, Newly described British subspecies, 95.
——, Hedge-, Recovery of marked, 48, 239; Building in Blackbird's nest, 174; feigning death, 368.
——, House-, Number of feathers in nests of, 309.
——, Irish Hedge-, Newly described subspecies, 96.
Sparrow, Tree-, Recovery of marked, 42; Notes on for 1934, 347.
spermologus, Colœus m., see Jackdaw.
spinoletta, Anthus, see Pipit, Alpine.
spinus, Carduelis, see Siskin.
Spittle, R. J., Note on Montagu's Harrier in Oxfordshire, 279.
Spoonbill, seen in Carmarthenshire, 56; in Lancashire, 86; in Norfolk, 361.
squatarola, Squatarola, see Plover, Grey.
Starling, Recovery of marked, 37, 235; Movements of ringed, to and from abroad, 106.
——, Rose-coloured, at Lundy, 49.
——, Shetland, breeding in S. Uist, 96.
stellatus, Colymbus, see Diver, Red-throated.
Stint, Little, in Derbyshire, 32; in Sussex in winter and spring, 54; in Cardiganshire, 284; at Altrincham Sewage Farm, 343; at Staffordshire Reservoirs, 346; Wintering in Somerset, 351.
——, Temminck's, obtained in Herefordshire—Correction, 30; Breeding of, in Scotland, 97; Extension southward of breeding-range in Norway, 148; in Lincolnshire, 149; in Ayrshire, 209; Courtship flight of, 214; in Norfolk, 362.
Stonechat, Hebridean, Newly described British subspecies, 95.
strepera, Anas, see Gadwall.
striata, Muscicapa s., see Flycatcher, Spotted.
subbuteo, Falco, see Hobby.
subruficollis, Tryngites, see Sandpiper, Buff-breasted.
Swallow, Recovery of marked, 48, 240; Utilizing Robin's nest, 146; Clutches and broods, 146; Results of Ringing and Trapping in Carmarthenshire, 170; Food of nestling, 171; flying through narrow aperture, 171; young, assist in building the second nest, 204; a Fly parasitic on the, 225; in North Atlantic, 274; in Yorkshire in December, 352.
Swallows, Homing experiments with, 283.

Swan, Bewick's, in Anglesey, 280; in Carmarthenshire, 311.

——, Mute, Young, diving, 150.

Swift, Late passage of to Ireland, 172; Late passage of in Sussex, 204, 279; Recovery of marked, 261; at Altrincham Sewage Farm, 343.

——, Alpine, in Pembrokeshire, 174.

sylvatica, Strix a., see Owl, Tawny.

tadorna, Tadorna, see Duck, Sheld-.

Tate, Clive, Note on Tameness of a Guillemot, 314.

Teal, Recovery of marked, 68, 262; Movements of ringed, to and from abroad, 135.

temminckii, Calidris, see Stint, Temminck's.

Temperley, George W., Some Breeding-habits of the British Willow-Tit, 165; Note on Diving of the Shoveler, 241.

Tern, Arctic, in North Atlantic, 275.

——, Black, in Westmorland, 213; in Lancashire, 213; in Devon, 309; at Altrincham Sewage Farm, 345.

——, Bridled, Addition to the British List, 91; Notes on the breeding-habits, 93.

——, Common, Mortality among young, 211.

——, Sandwich, Recovery of marked, 72, 267; Movements of ringed, to and from abroad, 140.

——, White-winged Black, in Norfolk, 363.

Terns, Large clutches of eggs in, 150.

Territory, In the Great Crested Grebe, 191, 246; some Reflections on, 247.

Territory and Food, 191, 285, 287.

testacea, Calidris, see Sandpiper, Curlew-.

Tetley, H., Plumage changes observed in an Iceland Gull in Somersetshire, 199.

——, ——, see Davis, H. H.

theresae, Saxicola torquata, see Stonechat, Hebridean.

Thomas, J. F., Notes on result of Ringing and Trapping Swallows in Carmarthenshire, 170; Food of nestling, 171; Bewick's Swans and Leach's Fork-tailed Petrel in Carmarthenshire, 311.

Thompson, Gordon B., Note on Ectoparasites of the House-Martin—and an appeal, 278.

Thrush, Song-, Alighting on sea and killed by Lesser Black-backed Gull, 28; Recovery of marked, 43, 238; Attacking Lizard, 113.

——, British Song-, Alteration in name of, 96, 186; Movements of ringed, to abroad, 110; fluctuations in song of, 364.

——, Hebridean Song-, Alteration in name of, 96, 186.

——, Mistle-, Recovery of marked, 43, 238; Movements of ringed, to abroad, 110.

Ticehurst, Dr. N. F., Notes on Little Stint in Sussex in winter and spring, 54; Swallow utilizing Robin's nest, 146; Spotted Redshank, in Sussex, in spring, 150; Broad-billed Sandpiper seen in Sussex, 209.

tinnunculus, Falco t., see Kestrel.

Titmouse, Blue, Recovery of marked, 42; eggs of, hatched by Great Titmouse, 113.

——, British Willow-, Breeding-habits of the, 165; in Radnorshire, 212; Breeding in Norfolk' 359.

——, Coal-, double brood, 203.

——, Crested, Excavation of nesting-hole and Incubation, 226; in West Ross-shire, 277.

——, Great, Recovery of marked, 42; Hatching eggs of Blue Titmouse, 113; Building underground, 119; Parasite on, 311.

torda, Alca, see Razorbill.

torquatus, Turdus t., see Ouzel, Ring-.

totanus, Tringa t., see Redshank.

tridactyla, Rissa t., see Kittiwake.

trochilus, Phylloscopus, see Warbler, Willow-.

troglodytes, Troglodytes t., see Wren.

Tucker, W. B., Letter on Some Reflections on Territory, 247.

tundræ, Charadrius h., see Plover, Arctic Ringed.

Turnstone, Probably, in North Atlantic, 275; in Gloucestershire, 281; at Altrincham Sewage Farm, 343; at Brookland's Sewage Farm, 342; at Staffordshire Reservoirs, 346.
turtur, Streptopelia, see Dove,Turtle-
Twite, Hebridean, Newly described British subspecies, 95; Colour of bill of Hebridean Twite in nesting-season, 170.

urbica, Delichon u., see Martin, House-.

vanellus, Vanellus, see Lapwing.
VENABLES, L. S. V., Notes on Territory in the Dartford Warbler, 58; Census of Breeding Skuas on Noss, 87.
——, ——, ——, ——, and LACK, DAVID, Territory in the Great Crested Grebe, 191.
VICKERS, H. S., Note on Little Owl's Nest under Railway, 84.
vidalii, Athene n., see Owl, Little.
viscivorus, Turdus v., see Thrush, Mistle-.
vulgaris, Sturnus v., see Starling.

Wagtail, Blue-headed, at Altrincham Sewage Farm, 343.
——, Grey, at Brookland's Sewage Farm, 342.
——, Yellow, Movements of ringed, to abroad, 110.
Wagtail-roost in Derbyshire, 32.
WALLIS, H. M., Note on Swallow flying through narrow aperture, 171.
Warbler, Dartford, Notes on Territory, 58; in Devonshire, 204, 244.
——, Willow-, Recovery of marked, 43; Apparent Polygamy of, 78; in Glamorganshire in December, 283.
Water-Birds, A Census of, on the Highgate and Kenwood Ponds, 129, 288.
WATERSTON, GEORGE, Letter on Fulmar Petrel Investigation (1934), 182.
WATT, MRS. WINIFRED BOYD, Notes on Temminck's Stint in Ayrshire, 209; Pintail in Middlesex, 280.
Wheatear, Recovery of marked, 239.
Wheatear, Black-eared, possible, seen in Pembrokeshire, 81.
——, Greenland, in North Atlantic, 274.
Whinchat, Early nesting and building again while feeding young, 144.
Wigeon, Movements of ringed, from abroad, 135.
WILLIAMS, J. G., Notes on Hobby breeding in Breconshire, 205; Osprey in Radnorshire, 205; Iceland Redshank in Monmouthshire, 370.
WITHERBY, H. F., Additions and Alterations to the British List, 90; The Names of the Song-Thrushes, 186; The *British Birds* Marking Scheme", Progress for 1934, 302; Notes on birds laying while still attending brood from previous clutch, 151; on the plumage-changes in Iceland Gull, 202; on Shags inland, 313; Iceland Redshanks in British Islands, 372.
——, ——, ——, and LEACH, MISS E. P., Movements of ringed birds from abroad to the British Isles and from the British Isles abroad, Addenda iii., 106, 133; Note on Emigration of Lapwings in winter 1933-34, 208.
WOOD, J. D., Note on Arctic Skua in Berkshire, 242.
——, S. B., Note on Early brood of Coots in Cheshire, 372.
Woodchat, Seen in Sussex, 50.
Woodcock, Recovery of marked, 71, 266; Movements of ringed, to and from abroad, 139.
Woodpecker, Lesser Spotted, Mortality among nestlings, 147.
Woodpeckers, Spruces ringed by, 55.
Wren, Incubation- and Fledging-Periods of, 204; Number of feathers in nest of, 310.
——, Fire-crested, in Norfolk, 310, 360; in Kent and the bird's call-note, 349.
——, Golden-crested, Two nests in one tree, 49.
WRIGHT, W. A., *see* MANN, E.
zetlandicus, Sturnus v., see Starling, Shetland.

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